Patterns of Reminiscence in Autobiographical Memory

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Abstract

This research explores the relations between autobiographical memory and 'the self'. The content of memories recalled from across the lifespan was examined and it was found that the most accessible knowledge was that most relevant to the goals of the self. This proved to be the case, not only for memories recalled from the reminiscence bump (10 to 29 years of age), but also for memories from across the lifespan. Two components were observed in the reminiscence bump. An early peak, between 10 and 19 years, for recall of items associated with public events and a later peak, between 20 and 29 years, for the recall of private, more intimate, items and it is proposed that these patterns reflect two different stages of development of the self: generation identity and personal identity formation, respectively. From the content of the most accessible memories from other lifetime periods, it was found that these also may be related to the goals of the developing self. It is proposed that these patterns of reminiscence demonstrate the influence of self-relevance in the organisation of autobiographical knowledge.

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This work is dedicated to my mother, Alice Holmes, and to the memory of my father, William Holmes.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the Regulations of the University of Bristol. The work is original except where indicated by special reference in the text and no part of the dissertation has been submitted for any other degree.

Any views expressed in the dissertation are those of the author and in no way represent those of the University of Bristol.

The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

Signed: Alison Hall Date: 18/8/2000

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Holmes, A. and Conway, M.A. (1999)
Generation Identity and the Reminiscence Bump: Memory for Public and Private Events. Journal of Adult Development, Vol 6, No.1, 21-34

CHAPTER 1

Introduction

The term autobiographical memories refers to personal representations of past experiences: they are a personal history of the self The central aim of the research reported within this thesis was to investigate the powerful influence of the self in autobiographical memory. From the findings to be presented, it will be argued, not only that those memories most frequently recalled - for example, those from late adolescence/early adulthood (Fitzgerald & Lawrence, 1984; Rubin, Wetzler & Nebes, 1986; Conway & Rubin, 1993) - are those most relevant to the developing self (Fitzgerald, 1988; Holmes & Conway, 1999), but also that the most accessible memories from across the lifespan are those which have most relevance to the self. In all instances, the studies to be discussed were designed to explore hypotheses which speculated, in one way or another, that the memories recalled, whether from specific time periods, or from across the lifespan, would be those with the highest relevance to the goals of the past and present self.

Autobiographical Memory

Autobiographical memories are not discretely stored items, but, rather, are re-constructions of an individual's past experiences, subject to distortion and influenced by central control processes. Extensive empirical evidence supports the now generally accepted view that, when autobiographical memories are remembered, it is an active, rather than a passive process. Research has found that, when recalled, autobiographical memories are temporary constructions of past events, containing different types of knowledge (Barsalou, 1988; Conway & Bekerian, 1987; Linton, 1986), guided by central control processes (e.g. Baddeley, 1986, 1992; Norman & Shallice, 1981; Shallice, 1988; Burgess & Shallice, 1996). It has also been reported that the complex central control processes involved in the encoding and retrieval processes are modulated by the themes, plans and goals of the self (Anderson & Conway, 1993; Conway, 1992, 1996; Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993). Every time an autobiographical memory is constructed it is encoded and contains the influence of past and present selves; inherent in this is a susceptibility to change and distortion. (Neisser, 1981, 1986; Thompson & Cowan, 1986).

However, the meaning of the term autobiographical memory has been the subject of debate. It has been used to refer to a specific memory system, a term to describe remembrances from an individual's past life as well as the processes involved in remembering these events (see Baddeley, 1992). One of the definitions of the term autobiographical memory proposed in Baddeley's (1992) overview of the nature of autobiographical memory, was "a term describing knowledge and schemata that form the memorial basis of the self" (p.14). Nelson (1993) identified autobiographical memory as "specific, personal, long-lasting, and (usually) of significance to the self esteem...it forms one's personal life history" (p.8). Brewer (1986) defined autobiographical memory "as memory for information related to the self" (p.26). The self, being "the complex mental structure that includes the ego, the self-schema, and portions of long-term memory related to the ego-self (e.g. personal memories, generic personal memories, and autobiographical facts)" (p.27). When discussing the characteristics of personal memory representations, Pillemer (1998) concluded that they were "specific"..., rather than general, "detailed"... in terms of circumstances, contained "sensory images"... and that there is a conviction of veracity. (p.50). For the purposes of this thesis, the term autobiographical memory refers to recollections from an

individual's past life, which constitute "the personal history of the self" (Conway & Holmes, under review).

Organisation and Retrieval in Autobiographical Memory

As mentioned above, autobiographical memories include knowledge at different levels of specificity, dynamically retrieved by a complex retrieval process. Some of the central research findings that converged on this view are considered in this section, along with a description of how this knowledge might be represented in long-term memory.

In early, cue elaboration models (e.g. Norman & Bobrow, 1979; Morton, Hammersley & Bekerian, 1985), there was an assumption that memories were stored as discrete items, or records. This 'record' aspect has now, generally, been discounted as it fails to account for various phenomena in memory research. For example, using a cued-recall procedure adapted from Galton (1883), Robinson (1976) found differences in retrieval times in response to different classes of cue words. Robinson found that participants recalled memories in response to object and activity words faster than to emotion words. The 'records' approach also fails to explain false memories (Conway, Collins, Gathercole & Anderson, 1996), and

confabulation (Burgiss & Shallice, 1996). Most researchers (e.g. Barsalou, 1988; Burgess & Shallice, 1996; Conway, 1990, 1992, 1996; Conway & Bekerian, 1987; Conway & Rubin, 1993, Howe & Courage, 1997) have, instead, adopted a view which conceptualises autobiographical knowledge as being component based. Within this approach, autobiographical memories are viewed as patterns of activation across the different components of the knowledge base, with the stability of these patterns being dependent on the correspondence between the cue and the particular category of knowledge it initially accesses (Anderson & Conway, 1993; Conway & Bekerian, 1987; Conway, 1996).

The consensus that has emerged over the past decade, or so, is that different types of autobiographical knowledge are organised hierarchically, with representations at different levels of abstraction. Studies conducted and reported independently have converged to produce evidence for at least three broad categories of knowledge (Barsalou, 1988; Conway & Bekerian, 1987; Linton 1986; Schooler & Herrmann, 1992; Treadway, McCloskey, Gordon & Cohen, 1992). Conway and his colleagues' model of the organisation of autobiographical memory (e.g. Anderson & Conway, 1993; Conway, 1996; Conway & Bekerian, 1987), posits that autobiographical memories are represented at different levels of abstraction, ranging

from specific representations of experienced events to representations of themes and goals associated with extended periods of time. Three levels of autobiographical knowledge were identified: 'lifetime periods', which provide cues indexing less abstract representations, 'general events', which in turn index 'event specific knowledge'. The 'lifetime periods' level heads up the hierarchy. Organised both thematically and temporally, knowledge represented at this level covers abstract themes related to the self, usually covering periods of years, e.g. 'when I was married', 'when we lived in X'. Typically, lifetime periods contain general knowledge characteristic of a period (theme), e.g. significant others, locations, actions etc. These are more or less distinct periods with identifiable time frames. A temporal overlap in lifetime periods, e.g. a relationship theme overlapping temporally with a career theme, need not be sufficient to result in an overlap in the knowledge structures; the thematic content may be sufficiently different so as to result in different cues being necessary to access knowledge in each. However, a thematic overlap may form a higher order theme (Conway, 1992; Linton, 1986) such as career or relationship themes. If this occurs, the same cues can access multiple lifetime periods but, once accessed, knowledge specific to a single period will constrain access to associated knowledge.

The 'General Events' level represents more specific types of knowledge for example, 'travelling in India', 'the Americas Cup'. General events can be repeated (e.g. train journeys across India) which may have occurred over a period of months, weeks, days or single events (e.g. met Y), which may be have occurred over a period of hours (Barsalou, 1988). General events may also represent sets of events, linked thematically. For example 'mini-histories' related to skill acquisition such as learning to drive (Robinson, 1992).

The most specific level is 'Event Specific Knowledge', or the phenomenological record (Conway, 1992, 1996). Event specific knowledge describes very detailed knowledge of actions and objects. It contains knowledge of images, sensations and emotions. Knowledge of this type is central in the recall of autobiographical memories and, on the whole, the literature has shown the importance of its perceptual qualities. Johnson (1988) comments that "thinking about events...typically involves activation of perceptual (especially visual) qualities" (p.391). Rubin (1995) maintained that "imagery is a central feature (as close to a defining feature as one can get) of what most people mean by the term autobiographical memory." (p.157). It has been reported that recall of sensory, perceptual details is associated with effective source

monitoring (Johnson, Foley, Suengas & Raye, 1988) and in correct event recognition (Conway, Collins, Gathercole & Anderson, 1996). High levels of visual imagery have also been found to be associated with memory confidence (Neisser & Harsch, 1992). However, the effect of imagery on memory confidence is no guarantee of accuracy. For example, David & Howard (1994) found that it misled delusional patients into believing that something had happened (see also Conway et al, 1996). Temporal and thematic organisation of the autobiographical knowledge base is thought to be highly structured at lifetime period level, becoming increasingly less so in the lower levels of the hierarchy (Anderson, 1993).

The above, briefly, discussed the nested hierarchy of knowledge structures within the autobiographical knowledge base. What follows is a description of the iterative retrieval process employed when specific memories are constructed. From their study of graduates recalling aloud the names of former classmates and teachers, Williams & Hollan (1981) concluded that a memory is constructed through a process of "cyclic" retrieval. According to this view, the search process interacts with knowledge in long-term memory, and access is provided by a cue (Norman & Bobrow, 1979). Knowledge accessed by the search process is then evaluated against some pre-set criteria and, if the accessed

knowledge is inconsistent with the criteria, the cue is then elaborated for a further search, with the process being repeated until the memory is constructed. Norman & Shallice (1981) and Shallice (1988) posited that central control processes guide the interaction of the cyclical retrieval process with the autobiographical knowledge base. Conway and his colleagues have found that central control processes either incorporate, or have access to, the current self-concept, the "working self" with its active, though not necessarily conscious, themes, goals and plans (Anderson & Conway, 1993; Conway, 1992, 1996; Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993).

Level of entry into this hierarchically organised knowledge base can depend either on the nature of the cue or on how deliberate the attempt to remember is. It is also thought to determine the stability of the pattern of activation across the knowledge base. For example, Conway (1996) suggested general events may be the preferred level of entry, especially when retrieval is deliberate and the system is in 'retrieval mode' (Tulving, 1983; Schacter, Norman & Koustaal, 1998). It has also been found that when rememberers are asked to report the first memories that come to mind, the type of knowledge initially retrieved may be dominated by the general events (Burgess & Shallice, 1996; Conway & Haque, 1999). Also,

spontaneous, effortless, retrieval may occur when the knowledge base is accessed at the level of event specific knowledge in response to, externally generated, sensory cues as in the flashbacks experienced in post-traumatic stress or in the case studies of recovered memories in amnesia patients (Conway, 1997a; Lucchelli, Muggia & Spinnler, 1995).

Generating specific memories, or patterns of activation, may then be the product of extended search phases, using elaborated cues, or as a result of a more immediate direct retrieval. The stability of patterns of activation across the knowledge base varies depending on the correspondence between the cue and the particular category of the knowledge it initially accesses. The patterns of activation are least stable when 'lifetime period' knowledge is accessed and more stable when cues correspond to knowledge at the 'general events' level. If accessed at this level, associated knowledge at 'general events' and 'lifetime period' levels receive some activation and 'event specific knowledge' may also be activated. The most stable, least arduous, but rarest pattern of activation is achieved when cues correspond directly to 'event specific knowledge'. This can result in memories being constructed without repeated retrieval process cycles and activation then proceeds automatically (Moscovitch,

1992), with the influence of the current self being operative after the memory has been constructed (Conway & Pleydell-Pearce, 2000).

To summarise, recent generative models have characterised autobiographical memories as, cue dependent, effort-fully maintained, fragmentary, transitory, mental constructions compiled from different types of knowledge. They have been found to be dynamically generated by complex retrieval processes, which either incorporate, or have access to, the current self-concept with its active, though not necessarily conscious, themes, goals and plans (Anderson & Conway, 1993; Conway, 1992; Conway, 1996; Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993).

Mutual Dependency of the Self and Autobiographical Memory

The studies to be presented in later chapters were primarily concerned, not with neurological bases of autobiographical memory, or whether it is a separate system (Tulving, 1972) or sub-system (Nelson, 1993) but, rather, with some of the processes involved in the encoding and retrieval of memories. Autobiographical memories are by their nature self-referring, even "self-defining" (Singer & Salovey, 1993, p.4) and the reciprocal relationship between self and autobiographical memory should now be discussed. The self has long been explicitly described as a

multifaceted cognitive structure that organises, modifies and integrates functions of the individual (e.g. Epstein, 1973; Fitzgerald, 1992; James, 1890/1968; Kelly. 1955; Neisser, 1988; Sarbin, 1968). Carl Rogers (1951) viewed the self as "an organized, fluid, but consistent conceptual pattern of perceptions of characteristics and relationships of the 'I' and of the 'me'" (p.498). An account of the self, which covers the reciprocity of the self and memory, was first provided by Rogers, Kuiper & Kirker (1977).

> "The self is defined as an abstract representation of past experience with personal data. Phenomenologically, it is a kind of vague idea about who the person thinks he or she is. It probably develops to help the person keep track of the vast amounts of self-relevant information encountered over a lifetime. The self, then, represents the abstracted essence of a person's perception of him or her-self" (p.677).

Later, when reflecting on 'self', Neisser (1988) offered a scheme with which to consider the activities and functions of the self that identified 5 kinds of self-knowledge:

ecological self - based on a person's physical perspective on the world;

interpersonal self - refers to species-specific behaviour in which people relate and communicate to members of their own species;

extended or remembered self - the self as reflected in memories and anticipations;

private self - based on one's personal feelings and beliefs, the very private thoughts which, perhaps, cannot be verbalised or expressed in a simple or direct way;

conceptual self – based on culture-specific belief systems concerning nature and the workings of our own minds.

Neisser noted that the extended self is closely intertwined with the conceptual self, one in which beliefs about the self are noted. For example, whether or not you are generally smart, or if you are open or reserved. This conceptual self, in a mentally healthy person, may be slightly different from reality, but not to a large extent, otherwise it would create too many conflicts. Fitzgerald (1992) added "the process of constructing the "conceptual self", maintaining it, and revising it, all involve the remembered self." (p.109). This is congruent with Wagenaar (1992) who proposed that the "conceptual self" is adjustable on the basis of experience, achieved through a process of slow updating, whereby

autobiographical memory serves the important function of updating the conceptual self.

When we remember our past experiences, it is the belief that it was 'me' (or you) who passed through these experiences that gives continuity to the self. However, it should be noted that the 'self' is both stable and flexible. The literature, from across the different research interests in psychology, contains research on the reciprocity of the relations between the self and memory and many independent researchers have considered their intricate relations. Although the terminology differs, there is congruence in their views. For example, autobiographical knowledge has been viewed as:

1) a 'resource' of the self that may be used to sustain or change aspects of the self (Robinson, 1986);
2) having a role in providing a stable self-system (Conway & Rubin, 1993);
3) being used to establish "protoselves" (Barclay, 1993) and,
4) a "grounding" for the self (Conway & Tacchi, 1996).

Stressing the importance of the self as an organising agent, Conway & Pleydell-Pearce (2000), introduced the concept of a "Self-Memory System" (SMS), which incorporates the autobiographical knowledge base and the currently active goals and plans of a "working-self", or

current self-concept. A core feature of the (SMS) model is that the current goals of the self are conceived of as acting as control processes through which autobiographical knowledge is encoded and specific memories are constructed. They also propose that a function of the current self-concept, or "working-self", is to minimise self-discrepancies (conflicts between the three domains of the self: i.e. an actual, ideal and ought self (Higgins, 1987). The (SMS) model provides a framework whereby both the self and autobiographical memory may be both stable and flexible. The goal structure of the "working self" serves to both mediate the organisation of autobiographical knowledge at encoding and modulates construction of specific memories. Empirical evidence for the influence of the self in memory, at both encoding and retrieval, will now be reviewed. It will be seen that output (retrieval) can differ from input (encoding) and input is an interpretation of the experience.

Autobiographical Memory and the Influence of the Self

The literature contains many reports from researchers who found that self-reference is a facilitator to memory and the power of this influence, at encoding and retrieval, is reflected in a number of memory phenomena. In recall tasks, self-reference has been found to produce better performance. When Rogers, Kuiper & Kirker

(1977) asked participants to rate a list of 40 adjectives, which described different personality traits, they found that recall was best in a self-reference task, where they had to report whether the adjective described them. Performance was compared with a structural task (using big letters), a phonemic task (rhymes with) and a semantic task (means the same as). Pleasantness ratings have also been reported to be good indicators of recall (e.g. Packman & Battig, 1978) but Warren Chattin, Thompson & Tomsky (1983) found that when they asked participants to remember when they had last seen an item, autobiographical elaboration, compared to pleasantness ratings, produced better recall. From a study to be discussed in Chapter 3, Holmes & Conway (1999) found a self-relevant effect, with participants recalling significantly more private than public events in a free-recall task, which asked them to list the most important public and private events that had occurred in their lifetime.

The 'reminiscence bump' identified by Rubin, Wetzler & Nebes (1986) is another robust effect which reflects the powerful influence of self on memory. It is well established that in adults over the age of about 35 years old, there is a bump in an otherwise linear relationship between the number of memories recalled and the age of the participant at the time of the memory. The lifespan retrieval

curve, in a plethora of studies, using various techniques, has shown a marked increase in recall for memories dating to the period between 10 and 30 years old. For example, a reminiscence bump was observed by Fitzgerald (1988), who asked elderly subjects to recall 3 vivid memories. Fromholt & Larsen (1991) reported it using both normal participants and Alzheimer patients when they were asked to list important events. A greater number of flashbulb memories (Brown & Kulik, 1977) have also been found to occur during this period (Conway & Holmes, 1997). It has also been observed using cue-word techniques (Hyland & Ackerman, 1988; Rubin et al, 1986; Rubin, Rahaal & Poon, 1998; for reviews, see Conway & Rubin, 1993; Rubin & Schulkind, 1997a). So robust is this effect that it has now been observed for factual knowledge (e.g. Schuman, Belli & Bischoping 1997; Schuman & Scott, 1989; Sehulster, 1996). Physiological, psychological and sociological explanations of this phenomenon have been offered and these will be discussed in later chapters. However, although there is, as yet, no definitive explanation, there is a growing consensus that self-relevance is a major contributing factor in the accessibility of memories from this period. Its potency is perhaps best demonstrated where anomalies are observed. In a study reported by Conway & Haque (1999), who used two age groups, younger and older, of Bangladeshi participants, reminiscence bumps, for the

period between 10 to 30 years, were revealed for both groups. However, the older group had a second, larger, bump corresponding with the, pre-independence, state of conflict that existed in the country. Powerful enough to "Overshadow the Reminiscence Bump" (p.35) this second bump reflected highly self-relevant memories. Fitzgerald (1988) also reported a later "additional blip" (p.265) of self-relevant memories in the distribution of memories across the lifespan and found that these were associated with "the assassination of President Kennedy or the urban violence of the 1960s" (Fitzgerald 1992, p.367).

The association between flashbulb memories and level of affect and personal importance also provides evidence for the influence of the plans and goals of the current self at encoding. Although not complete records, flashbulb memories are highly detailed and durable memories of one's personal circumstances when hearing of a news event which is both surprising and personally important (Brown & Kulik, 1977). More recent investigations into this phenomenon (e.g. Pillemer, 1984; Conway, Anderson, Larsen, Donnelly, McDaniel, McClelland, Rawles & Logie, 1994; and, Neisser et al, 1995) have also found evidence for detailed and durable memories for personal circumstances, associated with intensity of emotion and personal importance at the time of the

event. The association between flashbulbs and level of affect and personal consequentiality again demonstrates the influence of the plans and goals of the current self at encoding. The literature also provides empirical evidence for some basic accuracy when adults remember personal experiences, whether recalled from childhood (e.g. Brewin, Andrews & Gotlib, 1993; Howes, Siegel & Brown 1993, Sheingold & Tenney, 1982; Usher & Neisser, 1993) or adulthood (Brewer, 1988). Where reported memories could not be verified, reasonably high levels of consistency have been found over time (Conway et al, 1994; Conway & Holmes, 1997; Pillemar, 1984). On this question of accuracy, the flashbulb literature has also provided evidence, suggesting the distortion of details to favour or support the self, when memories are constructed.

With his critique of the flashbulb hypothesis, Neisser (1982) considered it naïve to accept flashbulb memories as accurate and used a personal anecdote, concerning when he heard news of the bombing of Pearl Harbour, to illustrate their potential inaccuracy. He argued that if inaccurate, flashbulbs could not be formed at encoding. However, for the purposes of this review, what is important is that Thompson and Cowan (1986) revealed that some of the details of Neisser's memory of the event had been changed, a remembered baseball commentary had, in fact, been a football commentary.

Neisser (1986) accepted this finding and pointed out how significant this re-constructive error was. His parents had been immigrants, and he proposed that the substitution resulted from trying to identify with his adopted culture at a time when baseball was the 'all American' game. His conclusion was that this demonstrated a distortion of details, which reflected the influence of self upon memory. In a later contribution to the research on the nature of the self, Neisser (1988) noted "the remembered self is not independent of the conceptual self; our theories affect what we choose to recall as well as how accurately we recall it" (p.16). One finding from an unpublished study (Holmes, 1996) suggested that the influence of the current self-concept at reconstruction may have led to some distortion. This test/re-test, cross-national study was primarily concerned with investigating and comparing the encoding factors associated with flashbulb memories and vivid memories of private events. Participants generated and recorded surprising and personally important events. As expected, vivid memories (i.e. memories of private events, which had reached flashbulb criteria (Conway et al, 1994), when compared to flashbulbs, were associated with the highest levels of personal importance. However, vivid and non-vivid memories were just as likely to be recalled as having been of the highest personal importance. By co-incidence, there were several instances of siblings independently generating memories of

the same private event (news of the death of a loved one), with only one reaching flashbulb criteria. In one instance two participants generated memories of an event which had occurred 5 years earlier. The memory descriptions they provided (p.32) are set out below:

'A'

Test: "I was preparing to go to class while at HBS. My Dad called to tell me. I remember I was sitting at my desk and I was cold."

Re-test: "I was in my room at HBS in McCullogh dorm. I was Reading/studying, preparing for class."

'B'

Test: "I was waking from sleep my first night in our new house when my father called to tell me that 'X' (name withdrawn by researcher) had suddenly died."

Re-test: "Preparing breakfast in my new house in North Carolina. Our first morning."

Participant A's memory reached flashbulb criteria, with an attribute score of 9, out of a possible 10, whereas B's did not, scoring only 6. Scrutiny of these reports revealed differences in "consequentiality" (see Brown & Kulik, 1977) which it was suggested helped explain why only one of each reached flashbulb status. The event was the

death of a close family friend, however she was the Godmother of 'A'. It was also argued that it might be, not only 'politically incorrect', but perhaps damaging to the current self-concept to rate such a memory at less than the highest rating. If this is so, then these findings may also reflect the effect of current self on the retrieval process. Neisser (1981) provided good evidence for the influence of the self on recall when he compared John Dean's testimony, regarding his conversations with President Nixon, to the Senate Watergate Investigating Committee with taped recordings of these meetings. John Dean had acted as counsel to President Nixon prior to the Watergate scandal and earned the name 'the human tape-recorder' when he provided hundreds of pages of very detailed statements concerning dozens of meetings with the President. However, Neisser showed that although the testimony was basically accurate with regard to what was going on at the meeting, most details proved to be inaccurate. His recollections proved to be incorrect on the details of the conversations. That is, his testimony was an accurate reflection of the administrative style at the Whitehouse and the President's attitude to Watergate, but was distorted in terms of his own role in the proceedings. Further evidence for memory being distorted by the influence of the self has been reported in studies by Barclay and his colleagues (Barclay & Wellman 1986; Barclay 1986; Barclay & Subramaniam 1987). In a

memory-recognition test, Barclay & Wellman (1986) had participants keep records of everyday activities, which included descriptions and evaluations of each event, over a period of four months. At the test phase, to create new items, or 'foils', the descriptions or evaluations were adjusted. They also created a set of 'other foils' which changed both event description and evaluation. In five sessions, over the next two and a half years, participants had to make recognition judgments and provide confidence ratings about the accuracy of their judgments. Barclay & Wellman reported that although confidence ratings were consistently high, 50% of the 'foils' and 23% of the 'other foils' were judged to be actual events. Using a separate group of participants who made judgments about how semantically or conceptually similar the foils were to the actual events, they found that foils which were high in semantic similarity were associated with high rates of false recognition judgments, and those low in semantic similarity were associated with lower rates of false recognition. Barclay & Wellman concluded that autobiographical memory is typically inaccurate and that any plausible description that does not violate a schema expectance might be judged to be an experienced event. Focusing on Markus' (1977) proposal that self-schemas might subdivide into personality dimensions, in particular, dependence and independence, Barclay & Subramaniam (1987) employed a diary study to investigate the

influence of the self upon memory reconstruction. After classifying participants as either dependent or independent they instructed them to keep a diary for 3 weeks; they were then tested after an interval of five and a half weeks. The test phase involved both free and cued-recall, whereby participants freely recalled recorded events and also recalled events in response to cues taken from their diary entries. The results showed that in free recall, type of schematicity, dependent/independent, influenced recall in that the information recalled was schema dependent. This effect was not present in the cued-recall condition and Barclay & Subramaniam concluded that, in the absence of memory cues, schematic aspects of the self-system influence memory retrieval.

Studies investigating recovered and false memories have also reported findings that reflect the influence of the current goals of the self. As mentioned earlier, central control processes, incorporating the goals and plans of the current self-concept (Conway & Pleydell-Pearce, 2000), influence how experiences are represented in the autobiographical knowledge base and what is retrieved. They serve to inhibit items from entering into the process (Norman & Shallice 1980; Burgess & Shallice 1995). It has also been mentioned that one of the functions of the goals and plans of the current self-concept is to reduce self-discrepancies (Conway 1996; Conway & Pleydell-

Pearce, 2000). This becomes apparent when one considers the 'forgetting' and recovery that occurs in victims of trauma such as childhood sexual abuse. Cases of adults who recover such memories are well documented in the literature and one explanation for the lack of accessibility of these memories is that they reflect their organisation within the autobiographical knowledge base, where a separate, less integrated, knowledge structure is created (Conway 1997a).

Background and Aims of the Research

The original research theme for this thesis was to explore the concept of generation identity (Mannheim, 1928: 1952) and Chapter 2 reports the first of the studies investigating the generation identity hypothesis. Content analysis of the data suggested some evidence of differences in the types of knowledge retrieved by different groups of adults aged between 30 and 70 years old. Most importantly, content analyses of the data from the period of the reminiscence bump revealed not only that the bump may have two distinct components, but also that the early part may relate to the maturation of the self (Fitzgerald, 1988) which takes place during this period (Holmes & Conway, 1999). Explanations for the reminiscence bump are reviewed in Chapter 2 and the

account that views 'novelty' (e.g. Rubin, Rahaal & Poon, 1998) as a major contributory factor in the accessibility of these memories is explored in Chapter 4.

The similarities, rather than differences, in the data from the early studies proved to be more intriguing and the course of the research moved away from memories from the reminiscence bump and generation identity, specifically, and towards the influence of the self on memory more generally. The studies discussed in Chapter 5 were designed to test the hypothesis that the most accessible autobiographical memories from across the lifespan will be dominated by the experiences which related most strongly to the goals of the developing self (Erikson, 1950, 1985).

The data collected from all of the studies give strong further support for view that the goals of both past and present selves influence not only memories of the very specific private events recalled by participants, but for more factual knowledge too.

CHAPTER 2

Reminiscence Bump in the Lifespan Retrieval Curve

When older adults freely recall memories from across their lives and the age at the time of each memory is plotted, this consistently results in a distribution with three distinct components (Conway & Rubin, 1993; Rubin et al, 1986; Rubin & Schulkind, 1997a; Rubin et al, 1998 for reviews). An idealised version, Figure 1, clearly shows the components: childhood amnesia; the reminiscence bump; and, recency.

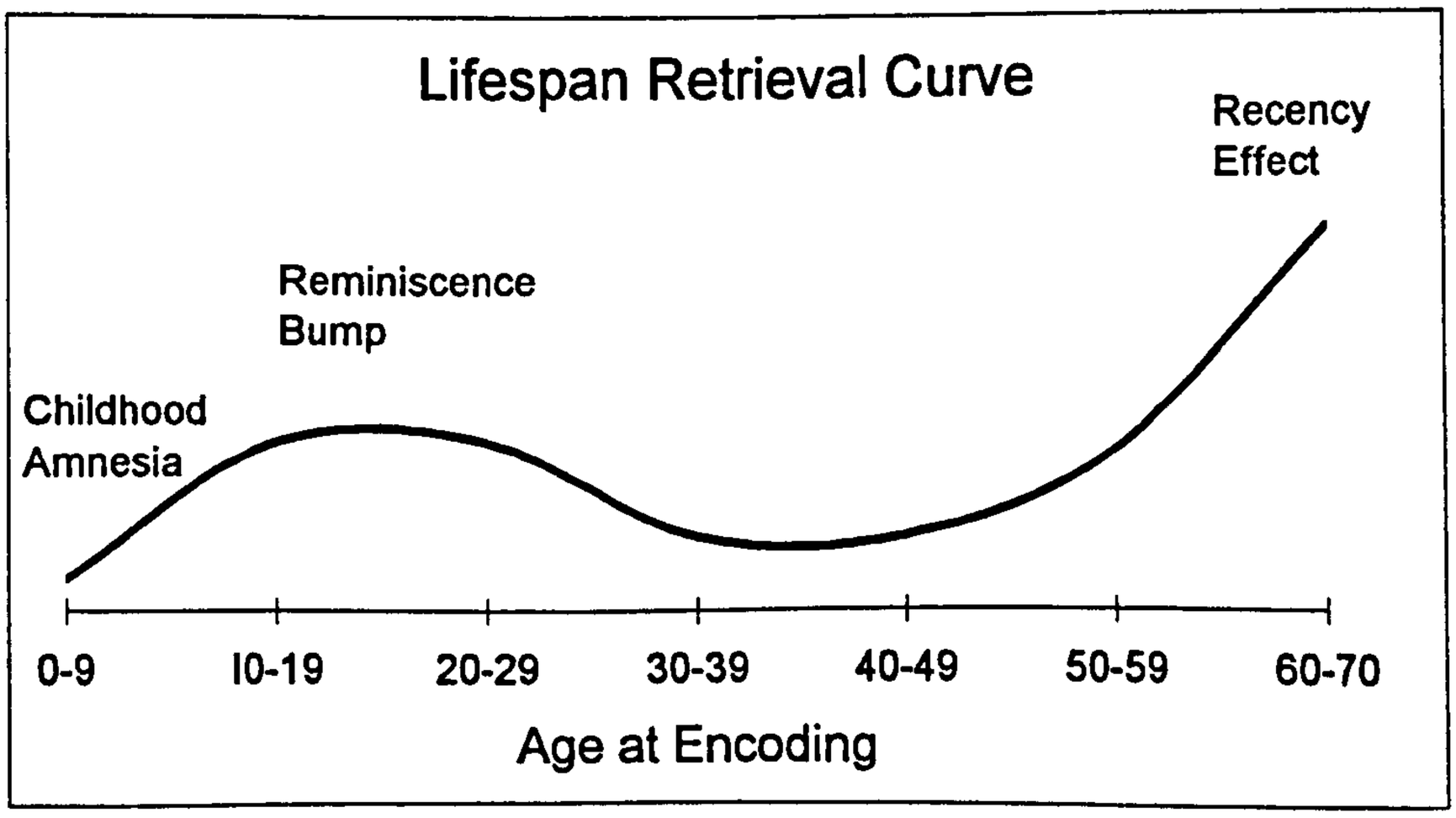

Figure 1. **Idealised lifespan retrieval curve.**

As a consequence of childhood amnesia (Wetzler & Sweeney, 1986), few memories are recalled from the earliest years. The second component, the reminiscence bump, is a large set of memories recalled from the period between 10 and 30 years old. Memories after the 10 to 30 bump, especially in studies using the cue-word technique, follow a power function which predicts a decrease in the number of memories retrieved as a function of time elapsed since the event (Rubin et al, 1986; Rubin & Schulkind, 1997a). With some exceptions, this pattern of distribution, identified by Rubin et al (1986), has proved to be robust. There have, of course, been some exceptions, where no increase in the frequency of items from the 10 to 30 years period were observed. For example, if participants are timed for a period of 5 or 10 minutes while they recall memories from specific periods of their lives (Howes & Katz 1992; Rabbitt & Winthorpe 1988). Another example of an anomalous distribution was reported by Cohen & Faulkner (1988) who, with a vivid memory task, reported the distribution decreasing across the lifespan, with the greatest number of memories being recalled from the first decade. However, these may have suffered from methodological problems with regard to the criteria used to select responses for analysis (see Rubin et al, 1998).

It is, perhaps, worth noting at this point that the distribution after the period of the bump may vary, depending on the technique used. For example, when older individuals are asked to recall a limited number of vivid memories there may not be a recency effect (e.g. Fitzgerald, 1986). When asked to recall important events, there may be either no (e.g. Rubin & Schulkind, 1997b) or, only a slight recency effect (e.g. Fromholt & Larsen, 1991). Mackavey, Malley & Stewart (1991) examined 49 psychologists' autobiographies for what they called "autobiographically consequential events" and noted the lack of a recency effect. As did Fitzgerald (1996) who asked participants to provide four memories they would want included in an autobiography. It should also be noted that although most of the aforementioned studies focused on what might be considered purely episodic memory (Tulving, 1983), many public events are associated with a personal context (Larsen, 1991). However, the focus here is on the reminiscence bump and this effect has been proved to be robust in a wide range of studies using a very wide range of techniques (Conway & Rubin, 1993 and Rubin et al, 1998 for reviews). As mentioned above, the literature has revealed that when individuals, older than about 35 to 40 years old, recall memories of events or activities from across the lifespan, a large set are retrieved from this period. Memories from this period are

also often judged to be more important (Schuman & Scott, 1989; Schuman, Scott & Belli, 1996). There is also some evidence that people answer general knowledge, semantic memory questions more accurately if the information was learned during these years, they also remember more public events from this period. (Conway & Holmes, 1997; Rubin et al, 1998; Schuman & Scott, 1989; Sehulster, 1996). 'Bumps', of varying magnitude and intensity, have been observed in younger subjects too (e.g. Sehulster, 1996; Schuman et al, 1997, Benson, Jarvi, Thiebar, Frye & McDonald, 1992; see also Fitzgerald, 1996).

A number of explanations for the reminiscence bump phenomenon have been offered from different research areas. Rubin et al (1998) reviewed findings from studies, using various techniques, where the bump had been observed and considered a number of theories, including cognitive, physiological, developmental, and Darwinian, explanations. Their preferred account emphasised the effect of novelty. They proposed that the reminiscence bump reflects a period during which many events are experienced which benefit from memory enhancing processes such as rehearsal and an increased effort to understand the experience.

But, given the proposed influence of the goals and plans of the current self at both encoding and retrieval discussed earlier, then a novelty account should not be sufficient to explain the increased frequency from this period. And, indeed, this appears to be the case. For example, Fitzgerald (1988) found that vivid memories from the reminiscence period consisted of a broad range of event types and he noted "life events such as marriages and births account for only 18% of Study 2 memories" (p.267). A lifespan development explanation was first offered by Fitzgerald (1988), who identified a relationship between the self and the reminiscence bump. From the data of his 1986 study, Fitzgerald observed a reminiscence peak for the period between 16 and 20 years. Fitzgerald argued that the increased frequency of vivid memories in the bump reflects the formation of personal identity and that we define ourselves in terms of a personal history (self-narratives) associated with the formation of personal identity as discussed by Erikson (1968) and Marcia (1980). Fitzgerald (1996) felt that it might be more accurate to refer to the reminiscence bump as an "identity effect". The period of identity formation, in late adolescence, originally observed by Erikson (1950, 1968) involves several important tasks. These include, identifying who and what one is and, developing new personal goals. In terms of the discrepancy reducing, function of the self (Conway, 1996; Conway

& Pleydell-Pearce, 2000) this would be considered the development of an 'actual', 'ought to be' and 'ideal' self (Higgins, 1987). The period of identity formation is a time when individuals establish personal goals that, in one form or another, may endure across the whole life, as an integral self is consolidated. This is a self that is more or less integrated with its immediate social groups and with society generally or the formation of a generation identity.

Generation Identity and the Reminiscence Bump

Although they may or may not always refer to it as their 'generation', most people, especially older people, consider that they belong to a particular social group. They might refer to it as, for example, 'in my day...' or 'in my time...'. In fact, there is some empirical evidence for the notion that we see ourselves as part of a generation. As part of a recent study Sehulster (1996) interviewed participants, aged from 26 to 67 years, and asked them how old they thought they were at the beginning and end of their "era" and to name films which had "defined their era". Sehulster found that his respondents perceived their "era" to have been when they were aged between 14 and 24 years. Interested in the concept of generation identity, Schuman & Scott (1989) noted "that each generation receives a distinct imprint from the social and political events of its youth is an old idea, most

often associated with Karl Mannheim ([1928] 1952)" (p.359). In his essay 'The Problem of Generations', Mannheim (1952) discussed how generations were social groups, united by memories of experienced events and that the period between adolescence and early adulthood is a stage when one is particularly open to gaining knowledge about the larger world. Mannheim did not provide a precise definition of 'generation', although he did stress that it is determined by social conditions, not biology. He said that "When novel events are rare and change is slow, as in traditional peasant societies, distinct generations may not appear" (p.309) and that generational units begin to develop a distinct identity around "the age of 17, sometimes a little earlier, sometimes a little later" (p.300). The generation identity hypothesis predicts that people are more likely to remember events experienced in late adolescence and early adulthood.

Recently, there has been renewed interest in the concept of generation identity. The influential role of the current self-concept, with its active goals and plans, at encoding and retrieval in autobiographical memory was discussed in Chapter 1. And one of the important points of Mannheim's idea of a generation unit is that it provides a mechanism for the construction of collective plans and goals of a social group. Conway (1997) proposed that generation

units share common goals and that generation identity arises from the types of knowledge emphasised within a unit. He argued that the sort of things that preoccupy a generation unit arise from problems set the young generation by the social forces in which they find themselves. As a generation emerges as a distinct social entity, experiences are encoded into long-term memory, at least partly, in terms of the plans and goals, which define the generation unit. If this is the case then different generations should have different types of memories and, maybe, even, different understandings of certain concepts.

The original aim of my research was to explore the concept of generation identity and the following three experiments were conducted, primarily, to test the hypothesis that there would be differences in the types of knowledge emphasised within a generational unit.

Experiment 1: *Ambiguous Names*

Introduction

The genesis of this study lies in a research note "The Complexity of Ignorance" (Belli & Schuman 1996). Here the authors discussed the mistakes that had been made when data from a 1991 survey, part of which asked over 1000 adults from the Metropolitan Detroit area to identify political symbols from the past 50 years, were re-examined. As part of a broader survey (Schuman, Belli & Bischoping 1997), subjects received the following instructions: *"This next section contains a few words and names from the past that come up now and then, but that many people have forgotten. Could you tell me which ones you have heard of at all, and, if you have, what they refer to in just a few words?"* (p.50). One type of mistake discussed related to an assumption made by the researchers that the meaning a symbol carried for themselves is much the same for others. For example, they assumed that the only possible correct answer to "Joe McCarthy" had to *concern "the Wisconsin Senator who claimed to pursue communists but was later censured for making wild and unsubstantiated accusations"* (p. 425). Respondents were given a zero score if they said 'don't know', or failed to either mention politics or communists. This resulted in zero scores for answers that were,

in fact, entirely legitimate. Examples of this include, responses to the cue Joe McCarthy being "Yes, Manager of the New York Yankees" and "Yes, Radio Announcer". Another mistake, on the part of the respondents, was name associations. Although they were told the full name of the figure to be identified, frequently only part of it was seized on and used to develop a response. A number had responded with "Eugene McCarthy (he ran for President in the 1960's) to Joe McCarthy, or with James Dean instead of John Dean (of Watergate fame).

The rationale for this study was that by providing only one part of a name, it would be possible, not only to avoid any researcher bias, but, by eliciting name associations, it would be possible also to avoid direct instructions to recall autobiographical memories. The present study was developed to investigate whether generation identity, as reflected by privileged retention of public knowledge from adolescence and early adulthood, would influence performance even in tasks that only indirectly require memory retrieval. The prediction was that there would be a marked increase in the early part of the reminiscence bump and that different age groups would complete ambiguous names with names relevant to the public figures that dominated their period of generation identity

Method

Participants:

One hundred adults aged 30 to 70 years (mean age 50), separated into four groups of 25 by age: 30 to 39 years old (mean 36 years); 40 to 49 (mean 45 years); 50 to 59 (mean 54 years); and, 60 to 70 (mean 64 years). Age was the only criterion used to select the participants, who were paid a small honorarium.

Materials:

Participants received a booklet containing 40 single names (20 ambiguous, "targets" and 20 unambiguous, "distracters"). The target names were:

Charles, Stewart, James, Graham, Montgomery, George, Ruth, Neville, Howard, Dean, Harrison, Holly, Richard, Thomas, Joseph, Blake, Oswald, Dylan, Scott and Duncan.

These names were selected, as they could have been either the first or surname of many famous characters from the past 70 years.

The unambiguous names were:

Botham, Blair, Trevor, Kinnock, Major, Cantona, Tim, Redgrave, Anderson, Charlton, Linford, Connelly, Lenny, Wax, Linnekar, Neeson, Will, Nelson, Diamond and *Peter.*

These were chosen because whether they were first or surnames was clear and they were part names of celebrities who had featured widely in the media, at the time of the experiment. The mix of items was intended to disguise the purpose of the experiment and, also, to avoid the danger of 'temporal lock-in' (Rabbit & Winthrope, 1989) whereby recall of one event cues another from the same period.

Procedure:

After an initial pilot study, conducted to refine the methodology, instructions were provided on a typewritten cover sheet to the experimental booklet. Participants were instructed that the booklet contained names which could be either first names or surnames, and that they should "read each one and, where possible, complete it to show the name of a famous person". They then had to write a short title describing the first memory to come to mind associated with the name. Participants were strictly instructed to respond with the first name that came to mind, to state who the person is (or was) and first memory that came to mind. The following examples of responses from the earlier pilot study were provided:

In response to the cue "Margaret", participants had written: *"Margaret Thatcher – former Prime Minister, remember seeing her on TV when she left 10 Downing Street";*

"Ann Margaret – movie star, remember her in the movie Tommy; and remember seeing Tommy at Odeon with Alice".

After completing the booklet, participants were then instructed to date each item by giving their age in years at the time of the experience that was recalled in regard to each name.

Results

All Response Types:

In total, the cues generated 3,436 associated memories: 1,720 in response to ambiguous names (targets) and 1,716 in response to unambiguous names. The 20 ambiguous targets generated 345 different characters (see Appendix 1). However, these included a small number of names of individuals who were not public figures and were, therefore, removed from further analysis. The unambiguous names (distracters) were employed as a control and, in the majority of cases, they generated the expected names.

Target Responses (ambiguous names):

The names of 309 different public figures were generated. In total 1,690 items were included in the data (mean response rate 84.5%). The distribution of response types to ambiguous names is shown in Appendix 3. From this it can be seen that response type frequencies ranged from a maximum of 28 for James, George and Richard at the upper end, to 3 for Dylan. Response rates ranged from 92 for 'Charles' down to 73 for 'Blake'.

A reminiscence peak, between 10 to 19 years, was observed when the data from each group were examined: 30-39 year group 39.6%; 40-49 years 38.8%; 50-59 years 33.8%; 60-70 years 25.9% (see Table 2, Figure 3). Least mean squares contrasts, between all decades for all groups and for all memories, revealed reliable differences, with the exception of the difference between the second and third decades for the 30 to 39 year age group.

Table 1. Distribution of memories, by age group, for memories associated with ambiguous names (targets).

Decade	30-39 group	40-49 group	50-59 group	60-70 group
0 – 9	5.5%	4.1%	3.9%	3.7%
10 – 19	39.6%	38.8%	33.7%	26.2%
20 – 29	28.5%	21.8%	22.6%	16.9%
30 – 39	26.4%	19.9%	16.6%	15.8%
40 – 49	-	15.3%	15.3%	14.3%
50 – 59	-	-	8.0%	14.7%
60 – 69	-	-	-	8.4%

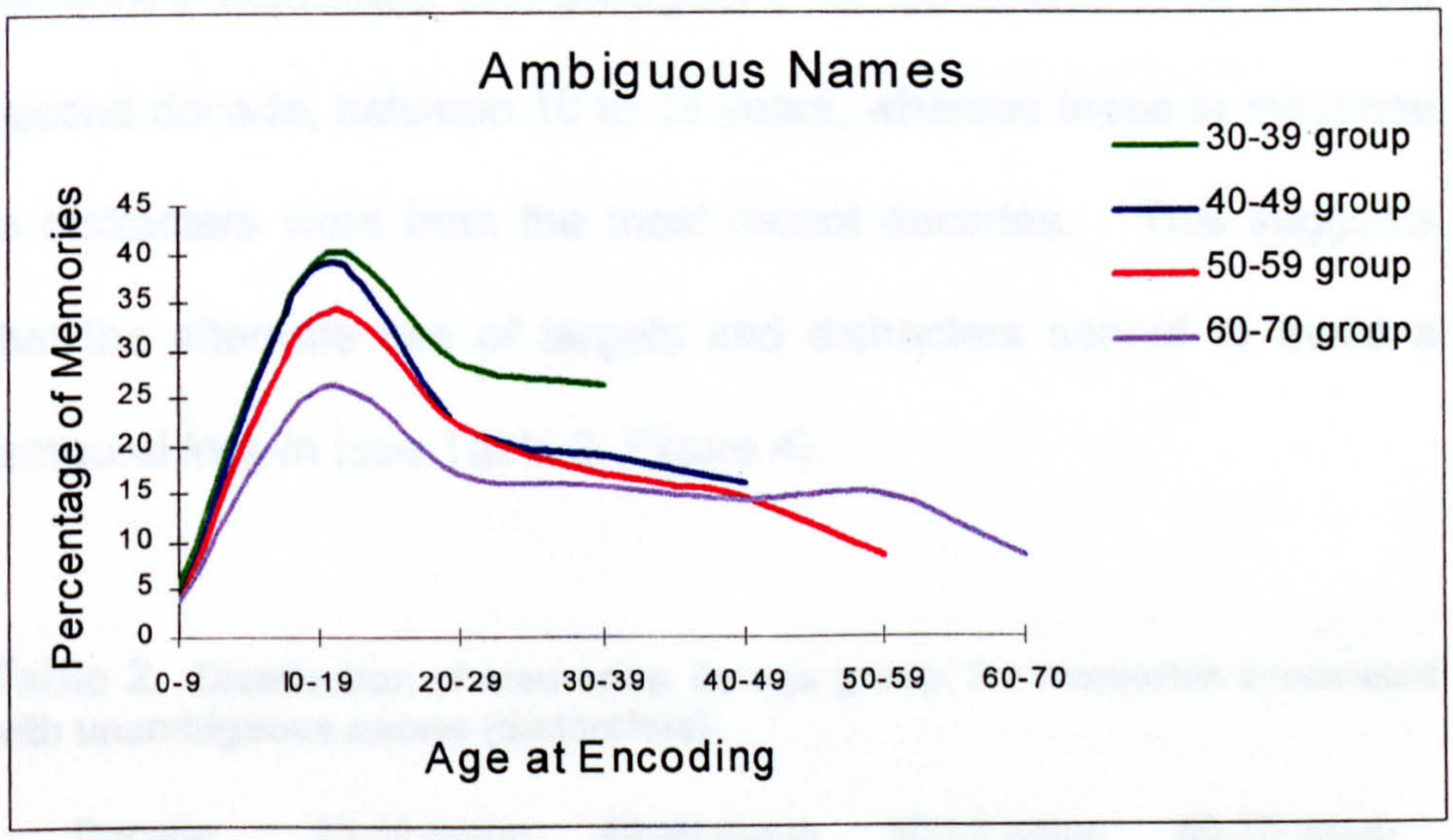

Figure 2. Lifespan retrieval curves, by age group, for memories associated with ambiguous names (targets).

Separate repeated measures Analysis of Variance, ANOVAs, were conducted for each age group. Type of name formed a variable with two levels (targets and distracters), and decade formed a second variable with four, five, six and seven levels, for each age group, respectively. No significant effects of type of name were found in any age group. This suggests that each age group responded in the

same way to ambiguous and unambiguous names: 30-39 year olds, $F(1,24) = 0.34$, n.s.; 40-49 year olds, $F(1,24) = 1.45$, n.s.; 50-59 year olds, $F(1,24) = 0.03$, n.s.; 60-70 year olds, $F(1,24) = 0.37$, n.s. However, the analyses did reveal significant type of name X decade interactions: 30-39 year olds, $F(3, 72) = 21.0$, $p.<0.0005$; 40-49 year olds, $F(4, 96) = 25.9$, $p.<0.0005$; 50-59 year olds, $F(5, 120) = 29.6$, $p.<0.0005$; and 60-70 year olds, $F(6, 144) = 26.4$, $p.<0.0005$. Memories associated with ambiguous names tended to be from the second decade, between 10 to 19 years, whereas those in response to distracters were from the most recent decades. This suggests that the alternate use of targets and distracters served to avoid a temporal lock-in (see Table 3, Figure 4).

Table 2. Distribution of memories, by age group, for memories associated with unambiguous names (distracters)

Decade	30-39 group	40-49 group	50-59 group	60-70 group
0 - 9	4.9%	2.6%	2.5%	2.6%
10 - 19	16.5%	17.8%	9.3%	7.2%
20 - 29	31.3%	13.8%	11.3%	4.4%
30 - 39	47.3%	27.2%	11.5%	8.6%
40 - 49		38.6%	37.6%	9.3%
50 - 59			27.8%	34.5%
60 – 69				33.3%

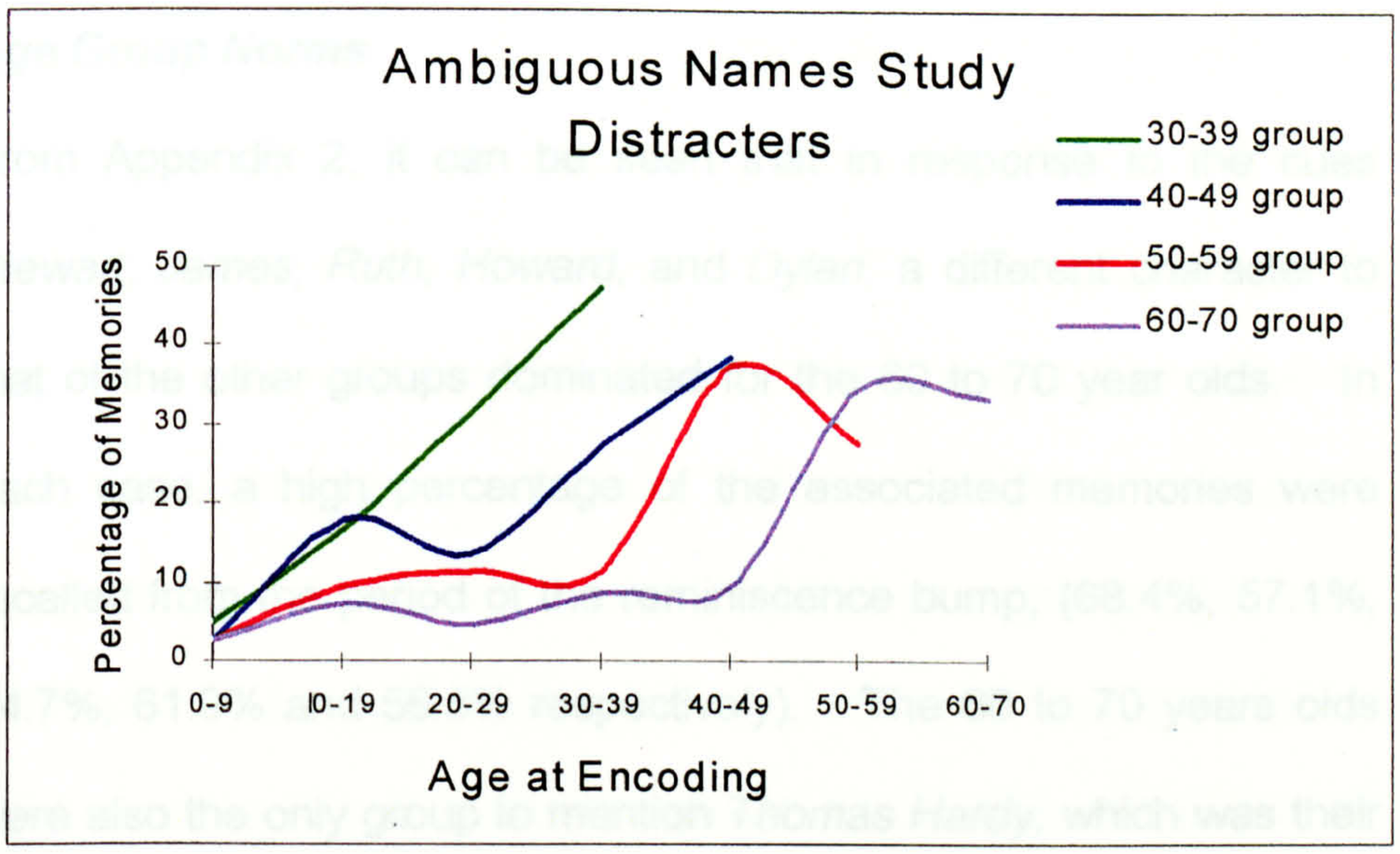

Figure 3. Lifespan retrieval curves, by age group, for memories associated with unambiguous names (distracters).

Generational Differences:

The distribution of responses to ambiguous name cues, by age group, is shown in Appendix 2. In order to discover if noticeable differences existed in the different cohorts' responses, those that made up less than 5% of a response type were removed from the data. From Appendix 3, it can be seen that although this only reduced responses to 1,334 items, response type reduced from 309 to 85. Appendix 3 also sets out the percentage of responses from the period of the reminiscence bump (between 10 and 29 years) and the period of the early part of the bump, i.e. between 10 and 19 years, for both all responses and for each cohort separately.

Age Group Norms

From Appendix 2, it can be seen that in response to the cues *Stewart, James, Ruth, Howard*, and *Dylan,* a different character to that of the other groups dominated for the 60 to 70 year olds. In each case, a high percentage of the associated memories were recalled from the period of the reminiscence bump, (68.4%, 57.1%, 64.7%, 61.9% and 56.5% respectively). The 60 to 70 years olds were also the only group to mention *Thomas Hardy*, which was their dominant response, with 60% from the period of the reminiscence bump. The 50 to 59 cohort also had their own dominant response to *Thomas*. This was Terry Thomas and, again, these were mostly from the reminiscence period, 85.7%. For *Harrison,* the 40 to 49 years group differed from others, they were more likely to respond with George Harrison, with 66.7% from the period of the reminiscence bump. For the 30 to 39 years group, their *Joseph* was the actress Leslie Joseph and 71.4% of these were from the period of the reminiscence bump.

Responses to the cue *Oswald* are plotted in Figures 4 and 5, from where it can be seen that, for both response types, there were very few associated memories recalled from recent decades. The percentage of associated memories falling in the period of the reminiscence bump, for each age group, were 75%, 91.3% 95% and

69.6% respectively. An interesting divide occurred for *Oswald.* All groups were aware of both Lee Harvey Oswald and Oswald Moseley (both are repeatedly mentioned in the media), but the figures which dominated for the different groups was that which was most salient in their adolescence/early adulthood. Responses from participants aged between 30 and 49 years old, the two youngest groups, were dominated by Lee Harvey Oswald, and responses from participants aged between 60 and 70, the oldest group, was dominated by Oswald Moseley. The 50 to 59 year olds had an equal number of responses for each public figure (Figures 4 and 5).

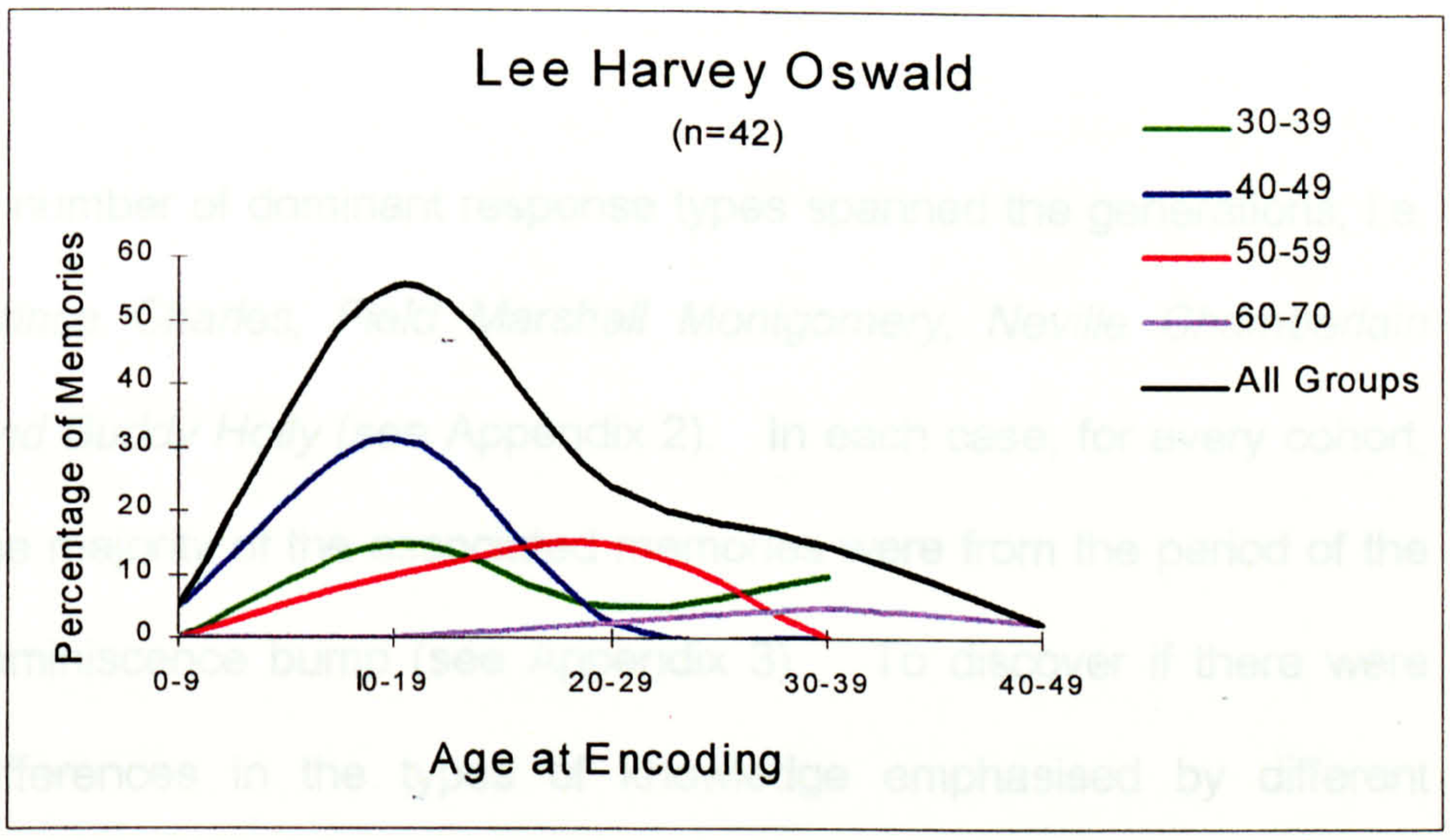

Figure 4. Lifespan retrieval curves, by age group, for memories associated with Lee Harvey Oswald.

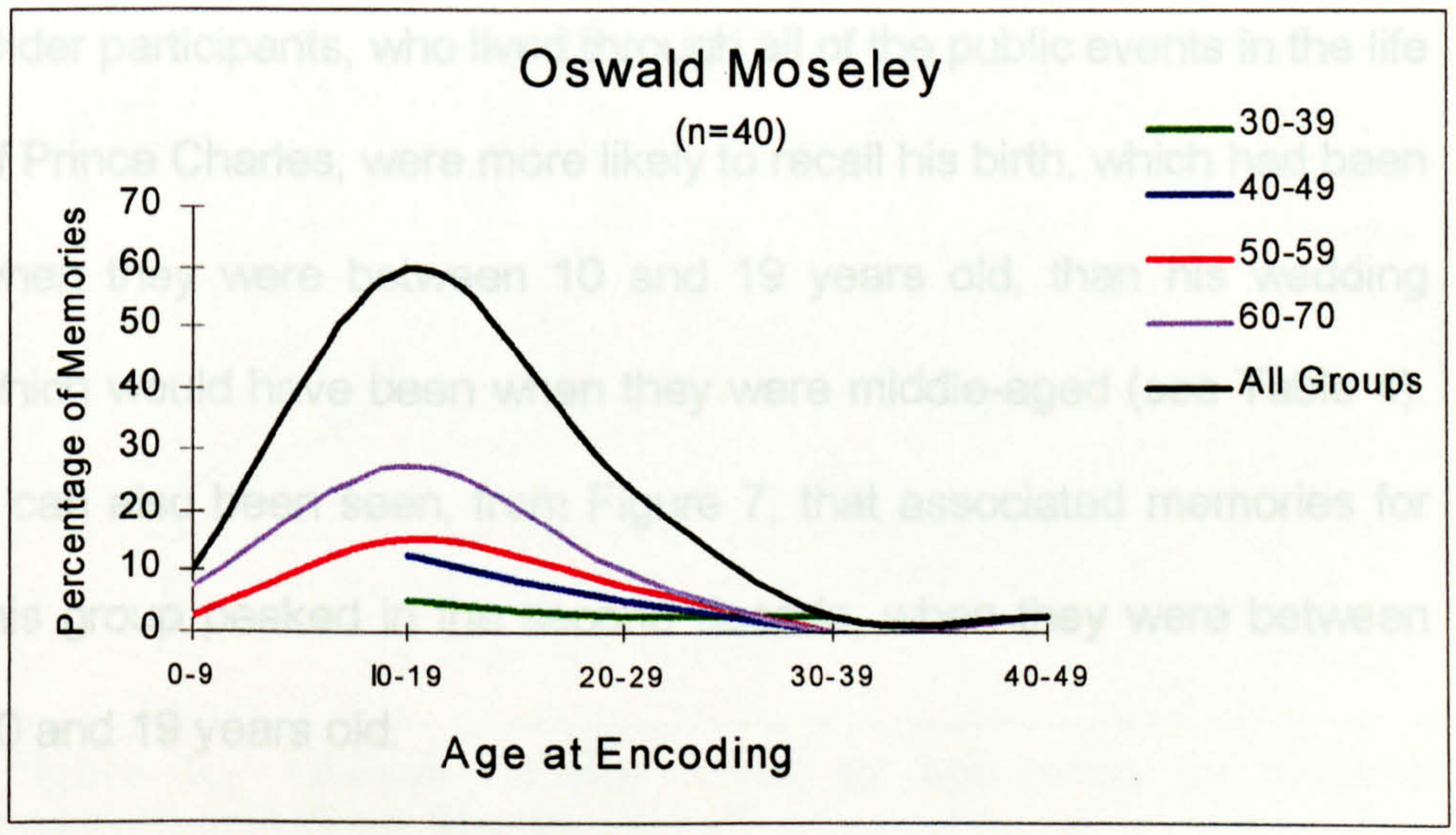

Figure 5. Lifespan retrieval curves, by age group, for memories associated with Oswald Moseley.

Differences in Content

A number of dominant response types spanned the generations, i.e. *Prince Charles, Field Marshall Montgomery, Neville Chamberlain and Buddy Holly* (see Appendix 2). In each case, for every cohort, the majority of the associated memories were from the period of the reminiscence bump (see Appendix 3). To discover if there were differences in the types of knowledge emphasised by different cohorts, the content of memories associated with these names was examined:

Older participants, who lived through all of the public events in the life of Prince Charles, were more likely to recall his birth, which had been when they were between 10 and 19 years old, than his wedding which would have been when they were middle-aged (see Table 4). It can also been seen, from Figure 7, that associated memories for this group peaked in the second decade, when they were between 10 and 19 years old.

Table 3. Type of Event recalled, by age group, related to Prince Charles[1] (items from 10 to 19 decade in parentheses).

Prince Charles	30 – 39 group	40 – 49 group	50 – 59 group	60 to 70 group
Birth	0	0	1(1)	5(4)
Marriage	5(2)	3	5	2
Camilla/Divorce	0	3	0	1
Diana's Funeral	2	0	1	0
Investiture	1	0	0	0
Some Contact	2	3	1	4
Interests	3(1)	1	1(1)	1
Media/Misc.	4(2)	4(2)	5(2)	3(1)
Total	17(5)	14(2)	14(4)	16(5)

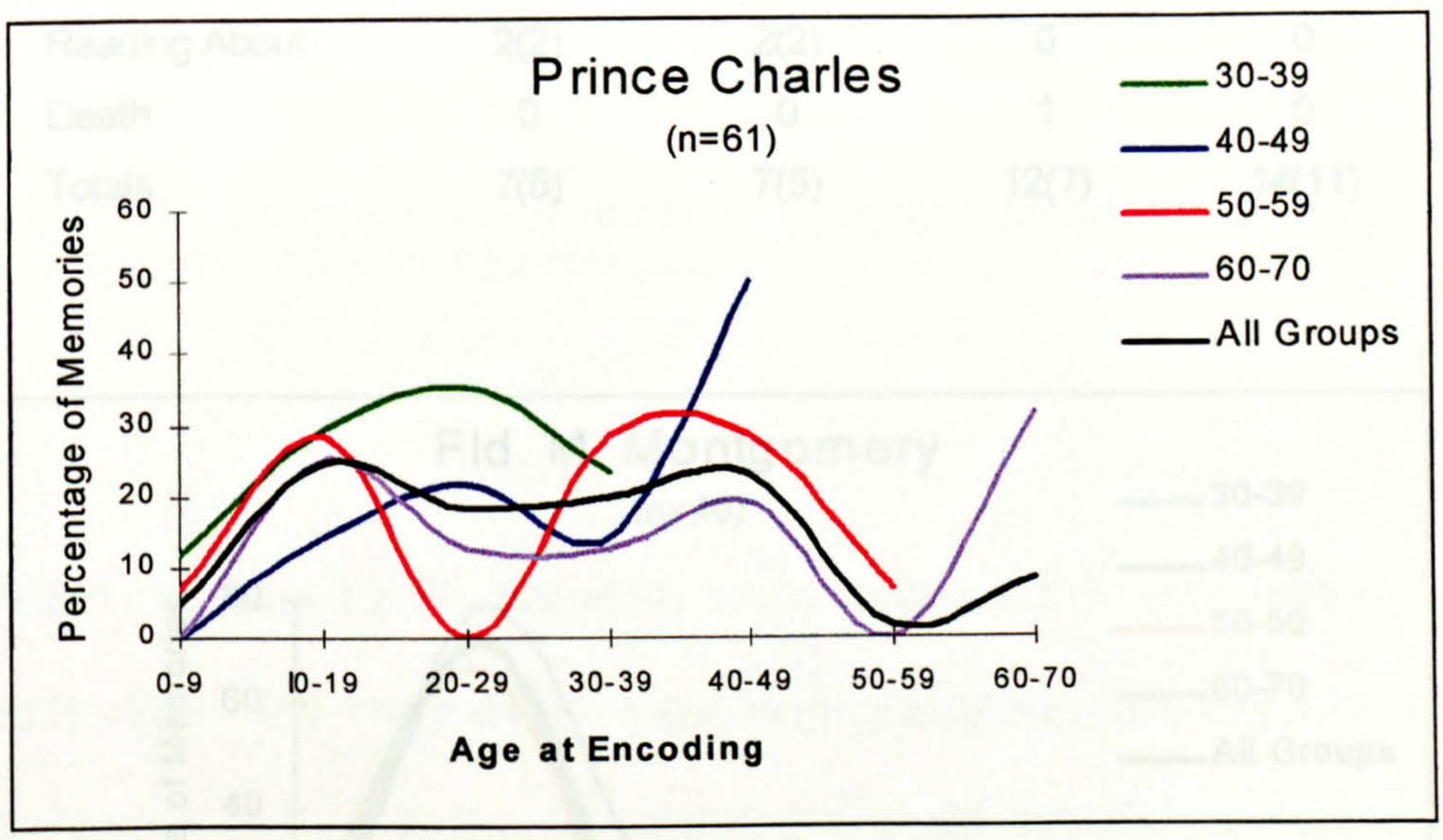

Figure 6. Lifespan retrieval curves, by age group, for memories associated with Prince Charles.

It can be seen from Table 4 that the oldest group was more likely to report memories associated with Field Marshall Montgomery that included detailed descriptions of his appearance. They also

[1] * Two thirds of sample tested before the death of The Princess of Wales.

tended to recall memories associated with newsreels and radio broadcasts, rather than, more recent, television broadcasts (Table 4). There were distinct peaks in the second decade (between 10 to 19 years), for all age groups (see Figure 7).

Table 4. Type of Event recalled, by age group, associated with Field Marshall Montgomery. (items from 10 to 19 decade in parentheses).

Fld. M. Montgomery	30 – 39 group	40 – 49 group	50 – 59 group	60 to 70 group
TV Documentaries	2(2)	1	2	1
Newsreels/Radio	0	0	4(4)	4(4)
Direct Contact	0	0	0	2(1)
Indirect Contact	2(1)	1(1)	2(1)	0
Description	1	3(2)	3(2)	7(6)
Reading About	2(2)	2(2)	0	0
Death	0	0	1	0
Totals	7(5)	7(5)	12(7)	14(11)

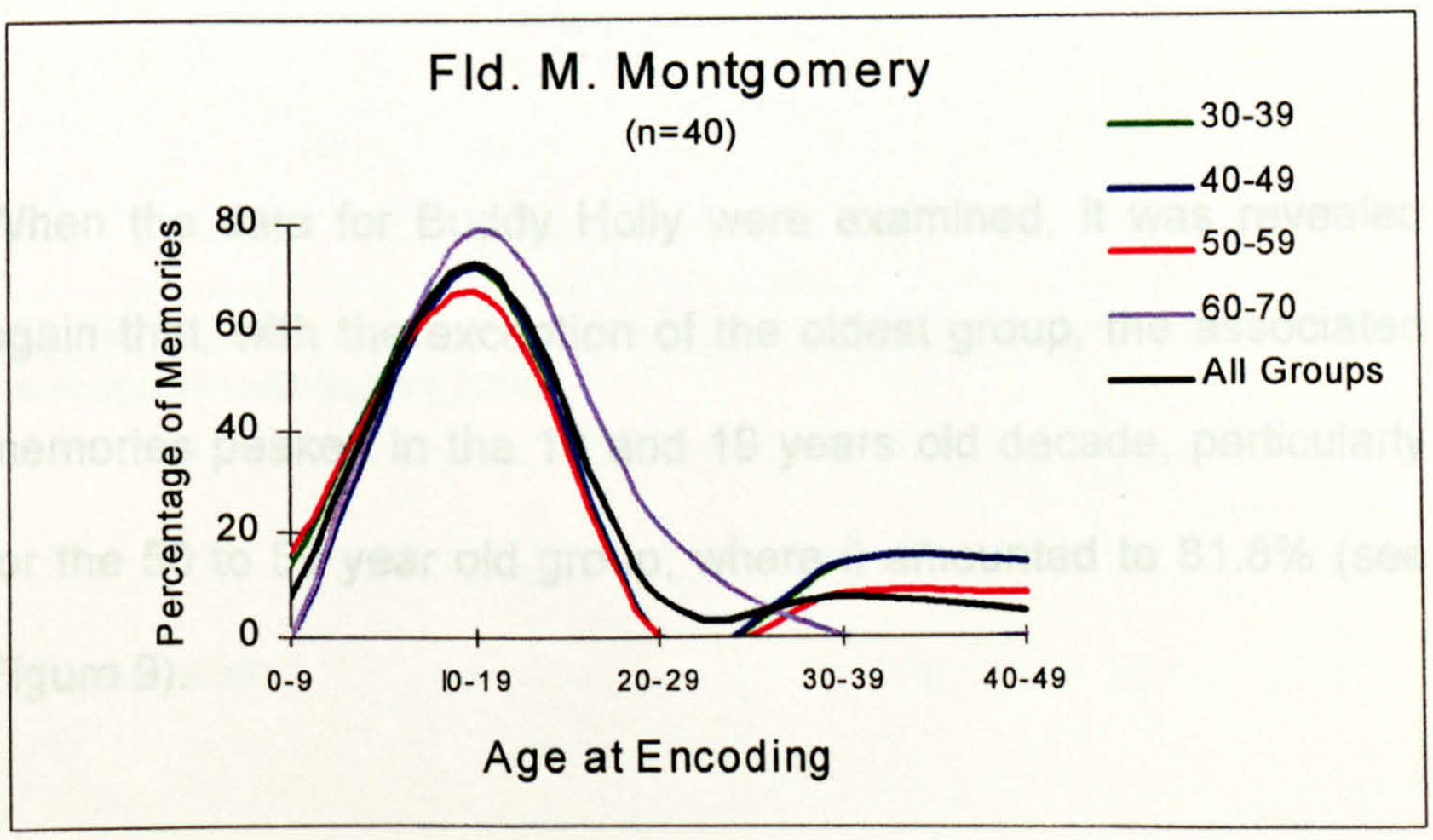

Figure 7. Lifespan retrieval curves, by age group, for memories associated with Field Marshall Montgomery.

A peak at 10 to 19 years was also revealed, for all age groups, in the memories associated with Neville Chamberlain, another prominent figure in recent U.K. history (Figure 8).

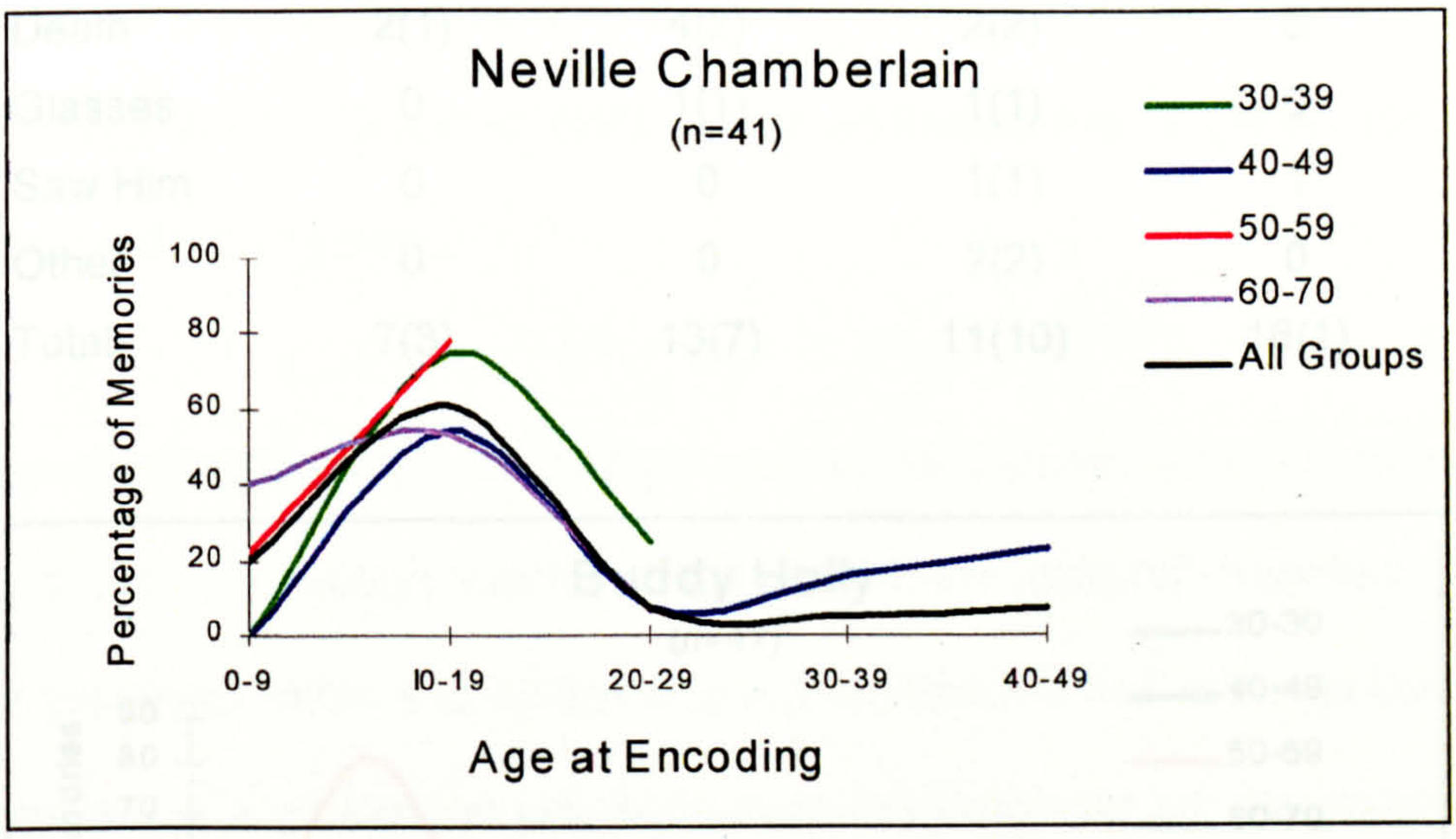

Figure 8. Lifespan retrieval curves, by age group, for memories associated with Neville Chamberlain.

When the data for Buddy Holly were examined, it was revealed again that, with the exception of the oldest group, the associated memories peaked in the 10 and 19 years old decade, particularly for the 50 to 59 year old group, where it amounted to 81.8% (see Figure 9).

Table 5. Type of Event recalled, by age group, related to Buddy Holly. (items from 10 to 19 decade in parentheses).

Buddy Holly	30 – 39 group	40 – 49 group	50 – 59 group	60 to 70 group
Music	3(1)	4(3)	5(4)	5(1)
TV/Film	2(1)	4(1)	0	5
Death	2(1)	4(2)	2(2)	5
Glasses	0	1(1)	1(1)	0
Saw Him	0	0	1(1)	1
Other	0	0	2(2)	0
Totals	7(3)	13(7)	11(10)	16(1)

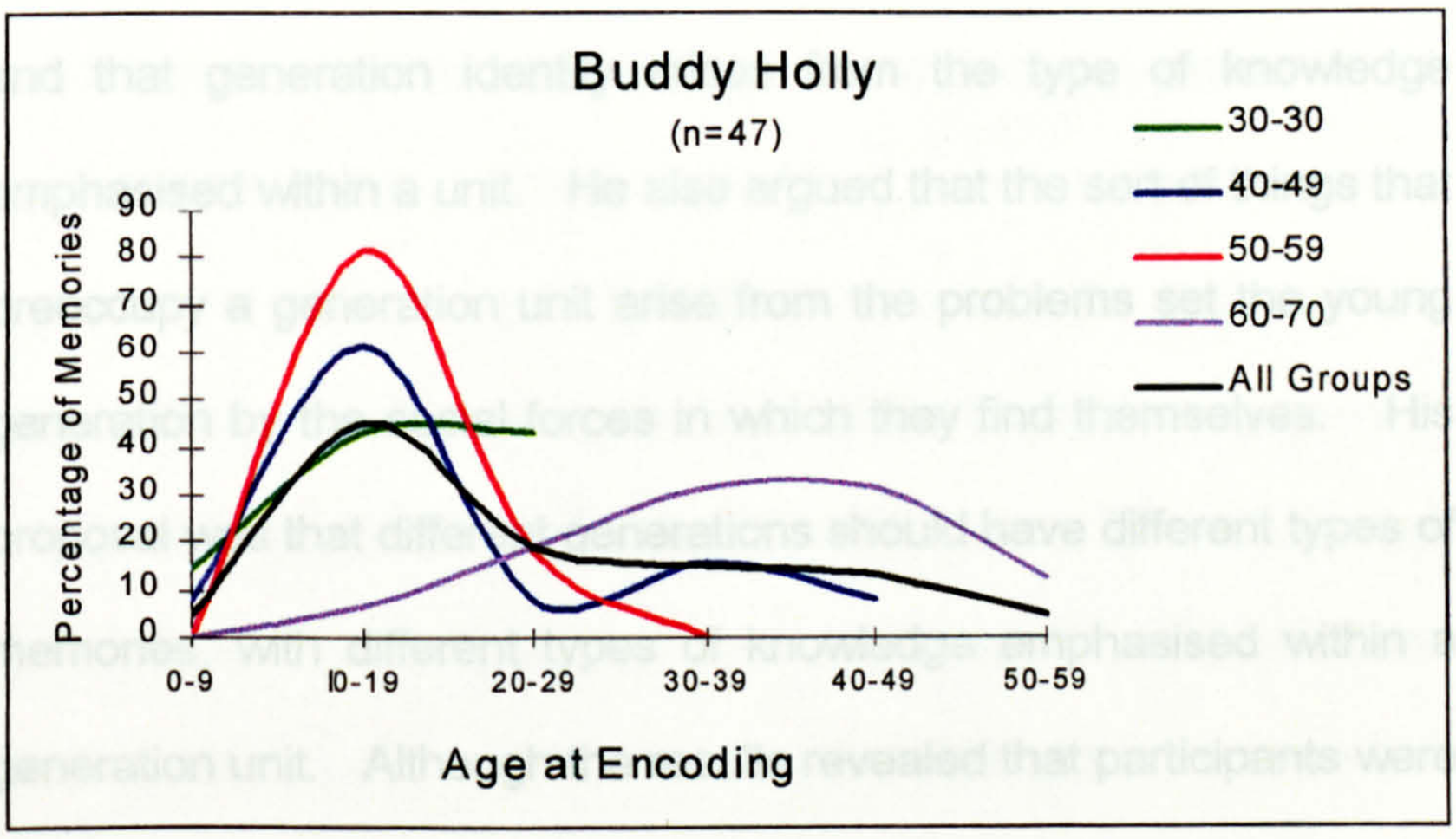

Figure 9. Lifespan retrieval curves, by age group, for memories associated with Buddy Holly.

Discussion

Mannheim emphasised that generations are the product of social conditions, not biology and, strictly speaking, dividing participants

into cohorts is a less than perfect method when examining data for generational differences. However, as the participants were all Bristol residents, the majority of whom had been born and lived in the area all of their lives, it was felt that they would have shared similar social forces and the only criteria used to create the groups was a 10 year age span. Sehulster (1996) reported that an era, or generation, spanned 10.15 years.

Conway (1997) proposed that generation units share common goals and that generation identity arises from the type of knowledge emphasised within a unit. He also argued that the sort of things that preoccupy a generation unit arise from the problems set the young generation by the social forces in which they find themselves. His proposal was that different generations should have different types of memories, with different types of knowledge emphasised within a generation unit. Although the results revealed that participants were just as likely to respond to target or distracter cues, the data hinted at some subtle generational differences, not only in the responses to ambiguous names, but also in the types of associated memories recalled.

Perhaps the most interesting finding was that the associated memories were most frequently recalled from the period when

participants would have been between 10 and 19 years old and it is proposed that this may reflect a period of generation identity. For all four cohorts, there were distinct peaks in this decade, together with a lack of recency effect. (see Figure 2). Although the peak is narrower, these distributions show a striking similarity to those reported by Fitzgerald (1988) for old participants.

Many public figures spanned the generations, but in a number of cases, different generations had their own and, in every case, it was found that these were most likely to come from the period of the reminiscence bump. When the oldest group's responses were examined, it was revealed that these people, who had had the opportunity to experience exposure to all the possible responses of younger groups, responded differently to the cues *Stewart*, *James*, *Ruth*, *Howard* and *Dylan* and was the only cohort to mention Thomas Hardy. The data also revealed age group norms which differed for the three other groups: Terry Thomas for 50 to 59 year olds; George Harrison for 40 to 49 year olds and Leslie Joseph for the 30 to 39 year olds. The age group difference in the responses to *Oswald* was an interesting example of generational differences. That President Kennedy was assassinated in 1963 is, possibly, one of the best-known events of the second half of the twentieth century, but the older participants were more likely to respond with Oswald

Moseley. Some differences in the types of knowledge recalled were also suggested, when the content of memories associated with common responses were examined: This occurred for Charles, Montgomery and Holly.

The 10 to 19 year peaks found in this data correspond, roughly, with the period of identity formation that was identified by Erikson (1950, 1968, 1970). At this time individuals establish personal goals that, in one form or another, may exist for many years as an integral self if consolidated, a self that is more or less integrated with its society. Erikson (1970) saw identity as being rooted both within the individual as well as within the communal culture. Linking this to Mannheim's (1928/1950) idea of generation identity, perhaps one of the important tasks of the Eriksonian psychosocial identity stage is the formation of a generation identity. Generation identity occurs when an individual recognises that he or she is part of a particular social sub-group with whom common goals, existential problems, knowledge and, eventually, memories of experiences of a similar type are shared (Conway, 1997b). The results reported here provide some preliminary evidence for subtle generational differences and suggest privileged retention of knowledge from a crucial stage in the development of the self, in a task that indirectly required memory retrieval.

Experiment 2 *Recalling Music, Films and Television*

Introduction

To further test the hypothesis that generation identity, as reflected by privileged retention of public knowledge from adolescence and early adulthood influences performance in a recall task, the study to be presented used more direct free recall tasks. It follows up on the interview study reported by Sehulster (1996) who reported that individuals aged between 26 and 67 years old perceived their generation as being bound by the period between 14 and 24 years old. His participants listed "five (or more) films " they considered as being "important films of your era, as part of your era" (p.150). As well as providing era-defining films, they also reported at least 5 of their favourite films and their age when they saw them. Favourite films were those which "could be a film you would recommend to others as a personal favourite, as if to say, "This is a really great film", or "This is my film, this is who I am, this 'describes' me: if you want to know me, see this film". "Make them personal favourites." (p.149). The mean age for favourite films was 27.59 years.

The results from Study 1, Ambiguous Names, suggested that the increased frequency of memories associated with public figures

recalled from the period between 10 and 19 years old may reflect a period of generation identity. Conspicuous reminiscence peaks were observed in this decade for all four cohorts and many of the public figures recalled in response to the cues were characters from the entertainment industry, both film and music. Continuing with this popular culture theme, the prediction was that in a simple, direct, recall task there would, again, be a marked increase in the early part of the reminiscence bump.

Method

Participants

89 adults aged 30 to 69 years old, separated by age into four groups: n=25, 30 to 39 years olds (mean 34.9); n=22, 40 to 49 year olds (mean 44.7); n=22, 50 to 59 year olds (mean 53.9); and, n=20, 60 to 69 year olds (mean 63.6). The participants were recruited through advertisements in local newspapers and billboards posted at the University of Bristol, and were paid a small honorarium.

Design

A within subjects design was used in which participants, in response to a cue, freely listed song and film titles and TV/radio programmes. Age when response was first encountered was the dependent measure.

Materials and Procedure

Participants were provided with the following written and verbal instructions "The following 3 pages each contains a cue category, please spend five minutes on each and respond with a list of what comes to mind when you read the cue". The cues presented were "Songs and/or pieces of music", "Films" and "TV and/or Radio Programmes". As an example of what was required, the instructions included a dummy page that contained responses to the cue "Type of Dance". These included responses such as "twist", "shake", "tap" "polka" and "Flamenco" which had been compiled from data from a pilot study. They were asked, in response to each cue, to "Please list as many answers as possible" and advised that they would be told when 5 minutes had passed. On completion of the three lists, they received instructions, both written and orally, to indicate their age when the listed item was first encountered. Participants were tested in small groups.

Results

The data pertaining to TV and/or Radio Programmes were excluded from analysis as, on reflection, it was considered an inappropriate cue. Not only because many films are broadcast on television, but also because of the high potential for error when dating items. Unfortunately, it had not been foreseen that the responses would include a high percentage of programmes that have been broadcast for many decades, e.g. The Archers, Coronation Street and Panorama.

All Responses

In total, the "Songs and/or pieces of music cue" generated 977 dated items (mean response rate 12.21) and "Films" generated a total of 1,156 dated items (mean response rate 13.44). Paired comparisons revealed that, across all age groups, participants recalled more film than music items, t (df. 1,77) = -2.529, $p.<0.013$.

Songs and/or Pieces of Music

When the data for each group were examined a reminiscence peak, in the period between 10 and 19 years, was observed for every age group: 30 to 39 (46.6%); 40 to 49 (40.6%); 50 to 59 (45.7%); and, 60 to 69 (39.5%) years old groups. (See: Table 6 and Figure 10). Bonferroni corrected contrasts revealed that the reminiscence peaks,

for the 30 to 39 and 50 to 59 years old groups, contained reliably more responses, when compared with other decades. (Table 7). No recency effects were revealed.

Table 6. "Songs and/or Pieces of Music". Mean response rates and, standard deviations in each decade, by age group.

Age at	30-39 group		40-49 group		50-59 group		60-69 group	
Encoding	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
0 - 9	1.75	2.52	0.95	1.15	2	3.57	1.53	2.18
10 - 19	5.79	3.88	4.75	3.32	6.18	4.25	4.47	3.79
20 - 29	3.17	2.35	2.75	2.63	2.18	1.78	2.37	2.31
30 - 39	1.71	2.31	1.80	1.61	1.12	1.96	1.47	1.93
40 - 49			1.45	1.85	1.41	1.66	0.79	1.75
50 - 59					0.65	1.06	0.42	0.84
60 - 69							0.26	0.65

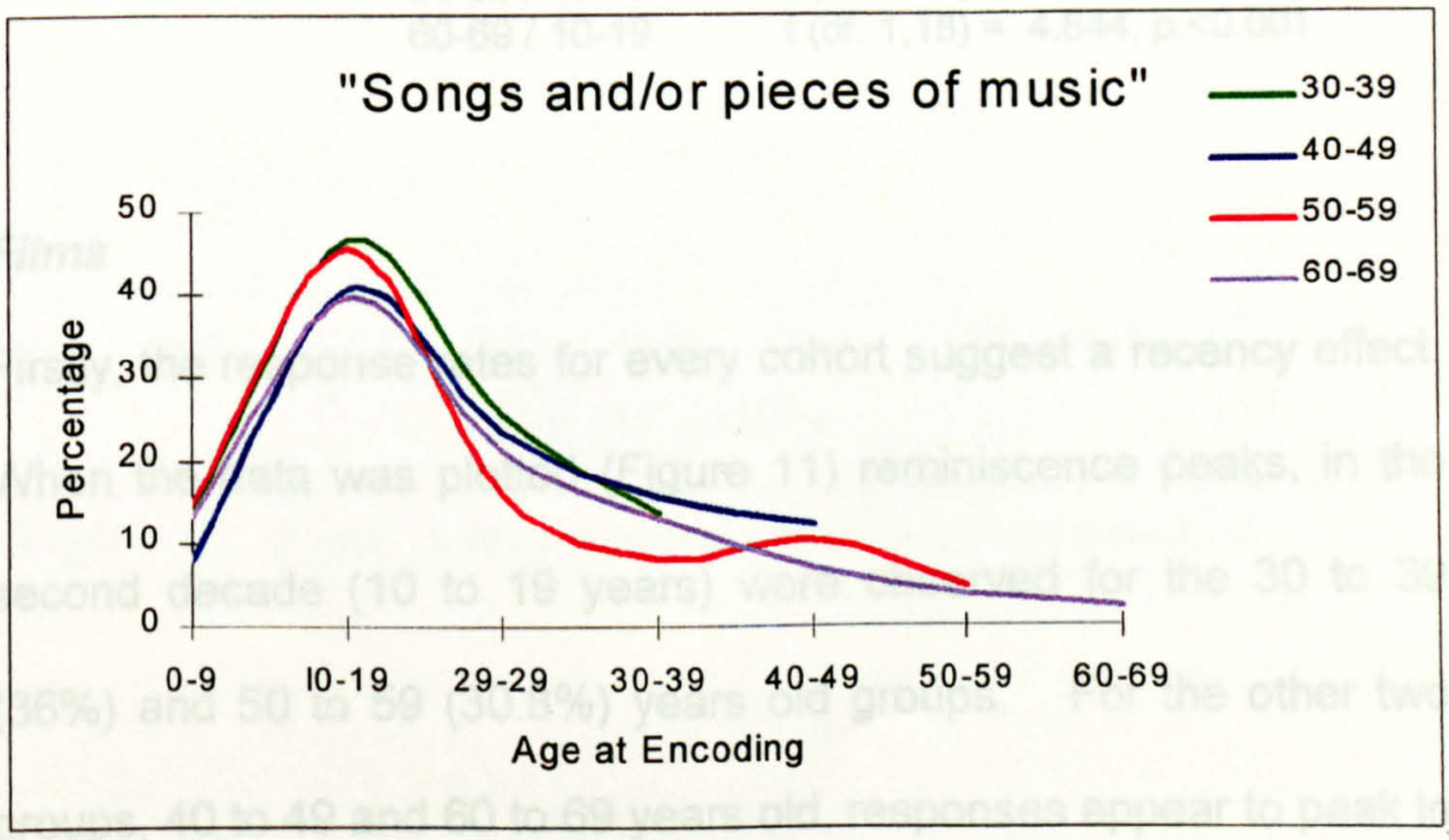

Figure 10. "Songs and/or Pieces of Music". Lifespan retrieval curves, by .age group.

Table 7. "Songs and/or Pieces of Music", Bonferroni corrected comparisons. (bold type = corrected significance levels for each age group).

Age Group	Contrast	Significance Level
30 to 39		**p.<0.017**
	0-9 / 10-19	t (df. 1,23) = -5.665, p.<0.001
	20-29 / 10-19	t (df. 1,23) = 2.840, p.<0.009
	30-39 / 10-19	t (df. 1,23) = 4.091, p.<0.001
40 to 49		**p.<0.0013**
	0-9 / 10-19	t (df. 1,19) = -4.936, p.<0.001
	20 -29 / 10-19	t (df. 1,19) = 1.795, **n.s.**
	30-39 / 10-19	t (df. 1,19) = 3.078, p.<0.006
	40-49 / 10-19	t (df. 1,19) = 3.606, p.<0.002
50 to 59		**p.<0.010**
	0-9 / 10-19	t (df. 1,16) = -3.335, p.<0.004
	20-29 / 10-19	t (df. 1,16) = 3.610, p.<0.002
	30-39 / 10-19	t (df. 1,16) = 4.096, p.<0.001
	40-49 / 10-19	t (df. 1,16) = 4.306, p.<0.001
	50-59 / 10-19	t (df. 1,16) = 5.409, p.<0.001
60 to 69		**p.<0.008**
	0-9 / 10-19	t (df. 1,18) = -3.052, p.<0.007
	20-29 / 10-19	t (df. 1,18) = 2.106, **n.s.** (p.<0.05)
	30-39 / 10-19	t (df. 1,18) = 2.682, **n.s.** (p.<0.015)
	40-49 / 10-19	t (df. 1,18) = 3.495, p.<0.003
	50-59 / 10-19	t (df. 1,18) = 4.424, p.<0.001
	60-69 / 10-19	t (df. 1,18) = 4.644, p.<0.001

Films

Firstly, the response rates for every cohort suggest a recency effect. When the data was plotted (Figure 11) reminiscence peaks, in the second decade (10 to 19 years) were observed for the 30 to 39 (36%) and 50 to 59 (30.8%) years old groups. For the other two groups, 40 to 49 and 60 to 69 years old, responses appear to peak in the period when they would have been between 10 and 29 years old (24.3% and 19.4% respectively) (see Table 8). However, Bonferroni corrected comparisons revealed that differences between the 2nd and other decades were not significant.

Table 8. "Films". Mean response rates and standard deviations, for each decade, by age group.

Age at	30-39 group		40-49 group		50-59 group		60-69 group	
Encoding	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
0 – 9	0.88	1.01	0.91	1.38	0.62	.0.92	0.67	1.68
10 – 19	5.12	3.53	3.18	2.32	4.38	4.47	2.00	2.54
20 – 29	4.67	3.05	3.36	3.09	2.81	2.02	2.11	2.27
30 – 39	3.76	4.35	2.68	1.70	1.91	2.07	1.44	1.65
40 – 49			3.73	3.38	1.95	1.94	0.89	1.49
50 – 59					2.57	2.99	1.83	1.86
60 – 69							1.94	3.39

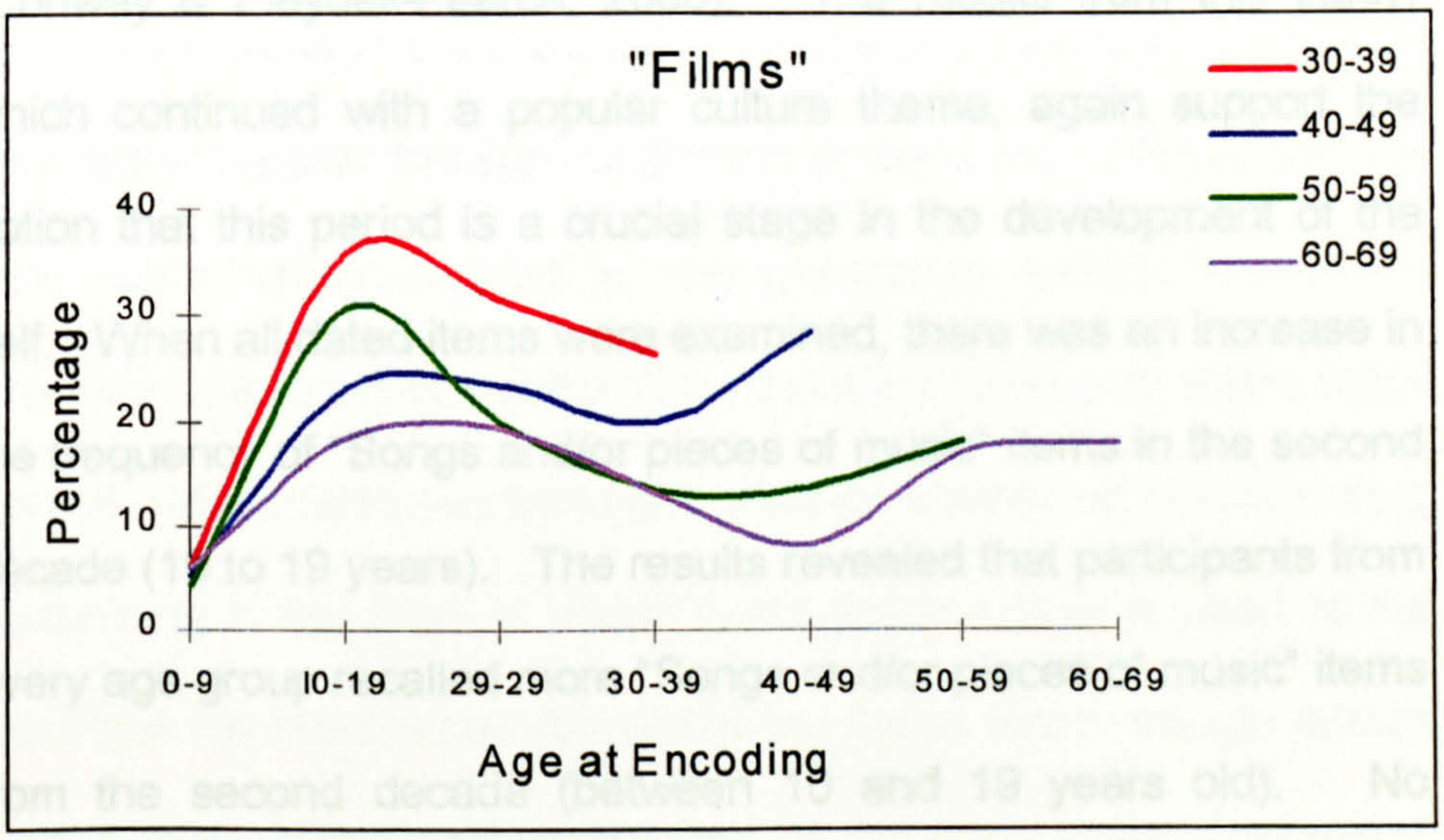

Figure 11. "Films". Lifespan retrieval curves, by age group.

Discussion

The results from the Ambiguous Names study (Study 1) suggested that individuals are more likely to recall public figures and associated memories from the period when they were between 10 and 19 years old. These findings are congruent with both the generation identity hypothesis, which predicts that people are more likely to remember events experienced in late adolescence and early adulthood and with the importance of self-relevancy stressed in the (SMS) model (Conway & Pleydell-Pearce, 2000). The results from this study, which continued with a popular culture theme, again support the notion that this period is a crucial stage in the development of the self. When all dated items were examined, there was an increase in the frequency of "Songs and/or pieces of music" items in the second decade (10 to 19 years). The results revealed that participants from every age group recalled more "Songs and/or pieces of music" items from the second decade (between 10 and 19 years old). No recency effect was observed for any age group. These patterns were similar to those from the Ambiguous Names study reported in Chapter 2.

When the "Films" data were examined, the only distinctive, although not reliably different, reminiscence peaks at the early part of the bump, were for the 30 to 39 and 50 to 59 years old groups and

recency effects were revealed for all groups. These recency effects may have resulted from the high number of films shown on television and also the prevalence of video rental today. Perhaps, with this design, "Films" was not a wise choice as a condition. However, regardless of the recency effects, the majority of films, overall, were recalled from the early part of the bump.

In both conditions, even though they were not asked to recall their favourite items, or items they regarded as being important, or even items they remembered vividly, participants of all ages frequently recalled items from the second decade of the bump. These findings lend some further support for the generation identity hypothesis. The increase in items recalled from the second decade again maps onto the Eriksonian psychosocial crisis of identity vs isolation and, particularly in the case of music items, lends further support to the view that the most accessible items are those most strongly related to the goals of the self at the time of the experience (Conway & Pleydell-Pearce (2000). One of the tasks at the identity stage is to affirm and be affirmed by a social order. Erikson (1969) stressed the importance of the social context in providing "something to search for and ...be true to" (p.235). In his paper, Sehulster (1996) stressed the importance of film as a medium for communicating one's identity "sometimes opinions about a film can be used as a

litmus test for group membership" (p.155). Music, surely, is as, if not more, important as such a medium.

An interesting result yielded by the "Songs and/or pieces of music" data, when compared to the results in Study 1 and for "Film" items, was the unusually high number of items recalled from when participants were under 10 years old. From Figure 10 it can be seen that 14.1% of the items recorded by 30 to 39 year olds; 8.1% of 40 to 49 year olds; 14,8% of 50 to 59 year olds; and, 13.5% of 60 to 69 year olds were from this period. By the novelty account of the reminiscence bump, individuals recall more items because there are lots of 'firsts' that are well retrieved and rehearsed as they serve as prototypes. The high number of items recalled from the first decade in this study may then lend further support for the notion that the increased frequency in recall during adolescence and early adulthood is the product of self-relevance. These items are remembered more frequently, not because they are new, but because they are goal-related.

CHAPTER 3

Introduction

It has been proposed that the period between 10 and 19 years old may reflect the development of a period of generation identity, linking the theories of Erikson (1950, 1968, 1970) and Mannheim (1928/1950). Experiment 3 was conducted, primarily, to investigate whether there would be generational differences in the types of knowledge recalled by generation units as proposed by Conway (1997b). The findings of the previous studies indicated privileged retention of knowledge from an important stage in the development of the self; that stage being in the early part of the reminiscence bump. But what of the latter part? The present study permitted examination of data, for both qualitative and quantitative differences, to further explore the relations between the period of the reminiscence bump and the developing self.

In their work on generation identity, Schuman and his colleagues (e.g. Schuman & Scott, 1989; Schuman, Reiger & Gaidys, 1994) asked participants, aged between 18 and 75+ years, to report either one or two "especially important" public events that had occurred over the previous 50 years. They found not only that most events

were recalled from adolescence/early adulthood, but also that these tended to be considered the most important. However, although this method resulted in a large data set related to public events, it included data related to events that had happened before many of the participants were born. Other 'event' studies have observed few public event memories. Using a free narrative interview method, over a period of 15 minutes, Fromholt & Larsen (1991) asked elderly participants, both mentally normal and dementia patients, to "recall events that have been important in your life" (p. 415). They found that few public events were recalled and later, when they asked them specifically to recall public events, normal participants generated, on average, about 2 to 3. When Fitzgerald (1986) conducted his postal questionnaire study, he asked for 3 flashbulb memories (as defined by Rubin & Kozen, 1984). Again, few public memories were recalled.

The present study was designed to elicit a considerable number of salient events, both public and private, from different cohorts. Based on the findings of the earlier studies, it was predicted that there would be a reminiscence peak in the 2nd decade for public events and in the 3rd decade for private events. It was also expected that there would be generational differences in the types of knowledge recalled for public events. Separate data sets for public

and private events also permitted examination of patterns of reminiscence for different event types, which might reveal influences that may make knowledge more accessible.

Experiment 3 *Public and Private Events*

Method

Participants

One hundred adults aged 30 to 70 years, separated into four groups by age: (n=25) 30 to 39 years old (mean 35 years); (n=25) 40 to 49 (mean 45 years); (n=25) 50 to 59 (mean 55 years); and, (n=25) 60 to 70 (mean 64 years). Participants were recruited through advertisements in local newspapers and billboards posted at Bristol University and were paid £5.00.

Design

A within-subjects design was used in which the participants freely listed both public and private events. Event type was a repeated measure with two levels, public and private. Events were dated with the age at encoding which was the dependent measure. Responses were also categorised and category of response was a secondary measure.

Materials and Procedure

After an initial pilot study to ensure that the instructions were sufficient to enable participants to complete the tasks, the study proceeded to test phase. Participants wrote their responses in experimental booklets. They were instructed to list those public events occurring in their lifetime, which they considered to be the most important. These could be local, national or international events, the only constraint being that they should list as many as possible in the 10-minute period available. They were asked not to edit events but simply list them as they came to mind. For each event a short title was required that would provide sufficient information for another person to be able to identify the event listed. Participants were also instructed to list private events from their own lives, which they considered to be the most important. In this case, they were to provide a title for each memory that would indicate to a reader what the main content of the memory was. Presentation of the tasks was counter-balanced. Participants were tested in small groups and given written instructions followed by a verbal summary of the tasks. After 10 minutes, the session was brought to a halt. The participants then undertook several unrelated tasks, before finally completing the remaining listing task. Participants then dated all responses with their age at the time of the event.

Results

All Events

In total 2,514 dated events were collected (mean 25), with significantly more private than public events listed, t (df. 1,99) = 2.31, p.<0.02. The totals, means and standard deviations for public, private and all events are shown in Table 9.

Table 9. Response rates, total, mean and standard deviation, by age group, for recall of Public Events, Private Events and All Events.

	Public Events			Private Events			All Events		
Age Group	Total	Mean	S.D.	Total	Mean	S.D.	Total	Mean	S.D.
30 – 39	303	12.1	5.9	298	11.9	5.5	601	24.0	10.5
40 – 49	286	11.4	5.6	307	12.3	5.8	593	23.7	10.5
50 – 59	313	12.5	5.4	382	15.3	5.2	695	27.8	8.5
60 – 70	292	11.7	6.4	333	13.3	5.5	625	25.0	10.4
Totals	1,194	11.9	5.8	1,320	13.2	5.6	2,514	25.1	10.0

Contrasting the lifespan retrieval curve for public events with that of private events, Figure 14 shows public events peaking in the 2nd decade, when participants were between 10 and 19 years old, whereas for private events it peaks in the 3rd, when they were between 20 and 29 years old. In order to make formal contrasts the data were entered into an analysis of variance (ANOVA) with event type a within-subjects variable with two levels (public and

private) and lifespan a within-subjects variable with four levels (first 4 decades, 0 to 39 years). Only the first four decades were used, as only these featured events from all participants. The analysis revealed a reliable event type x lifespan interaction, $F(3, 297) = 10.84$, $p.<0.001$ Least squares means contrasts between decades for each event type, using Bonferroni corrections ($p.<0.17$), found reliably more private events in the 3rd decade (20 to 29 years) compared to other decades. However, the findings may be somewhat complicated by the age of the participants (see Appendix 4 for distributions). Although when the data for each group was plotted, there was a reminiscence peak in the 3rd decade for private events for each age group (see Figure 12), for public events, only the 40 to 49 and 60 to 70 year old have peaks in the 2nd decade (Figure 13).

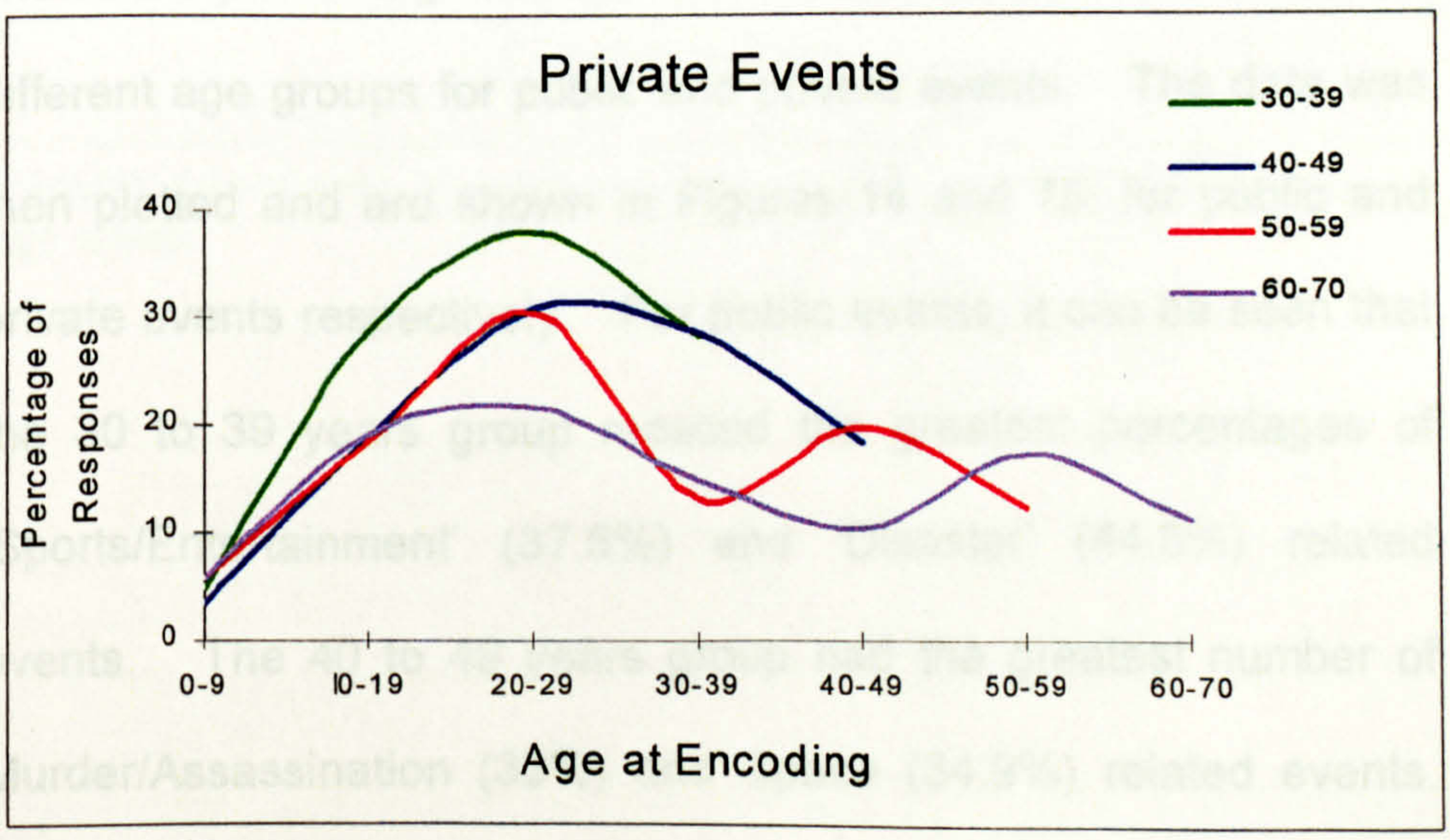

Figure 12. "Private Events". Lifespan retrieval curves, by age group.

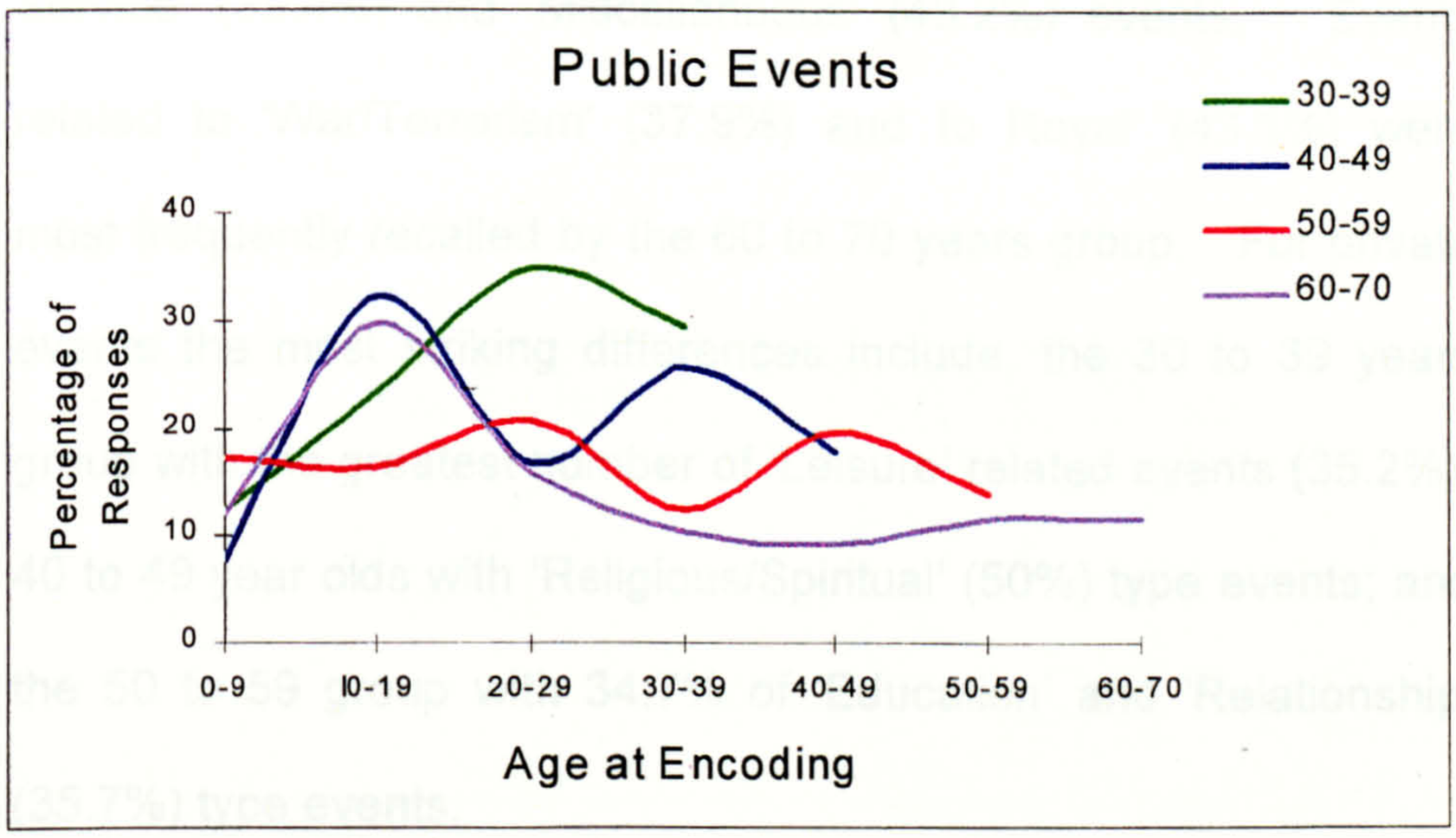

Figure 13: "Public Events". Lifespan retrieval curves, by age group.

Generation Identity

The events were categorised according to Appendix 5(a), which accounted for 95% of the responses, to make contrasts between the types of knowledge emphasised by different cohorts. Appendix 6 shows the percentages of the total of each class, recalled by the different age groups for public and private events. The data was then plotted and are shown in Figures 14 and 15, for public and private events respectively. For public events, it can be seen that the 30 to 39 years group recalled the greatest percentages of 'Sports/Entertainment' (37.5%) and 'Disaster' (44.6%) related events. The 40 to 49 years group had the greatest number of Murder/Assassination (33%) and Space (34.9%) related events. The 50 to 59 years group recalled the greatest number of 'Public

Service' (35.4%) and 'Miscellaneous' (43.2%) events. Events related to 'War/Terrorism' (37.9%) and to Royal' (43.3%) were most frequently recalled by the 60 to 70 years group. For private events the most striking differences include, the 30 to 39 years group with the greatest number of 'Leisure' related events (35.2%); 40 to 49 year olds with 'Religious/Spiritual' (50%) type events; and the 50 to 59 group with 34.7% of 'Education' and 'Relationship' (35.7%) type events.

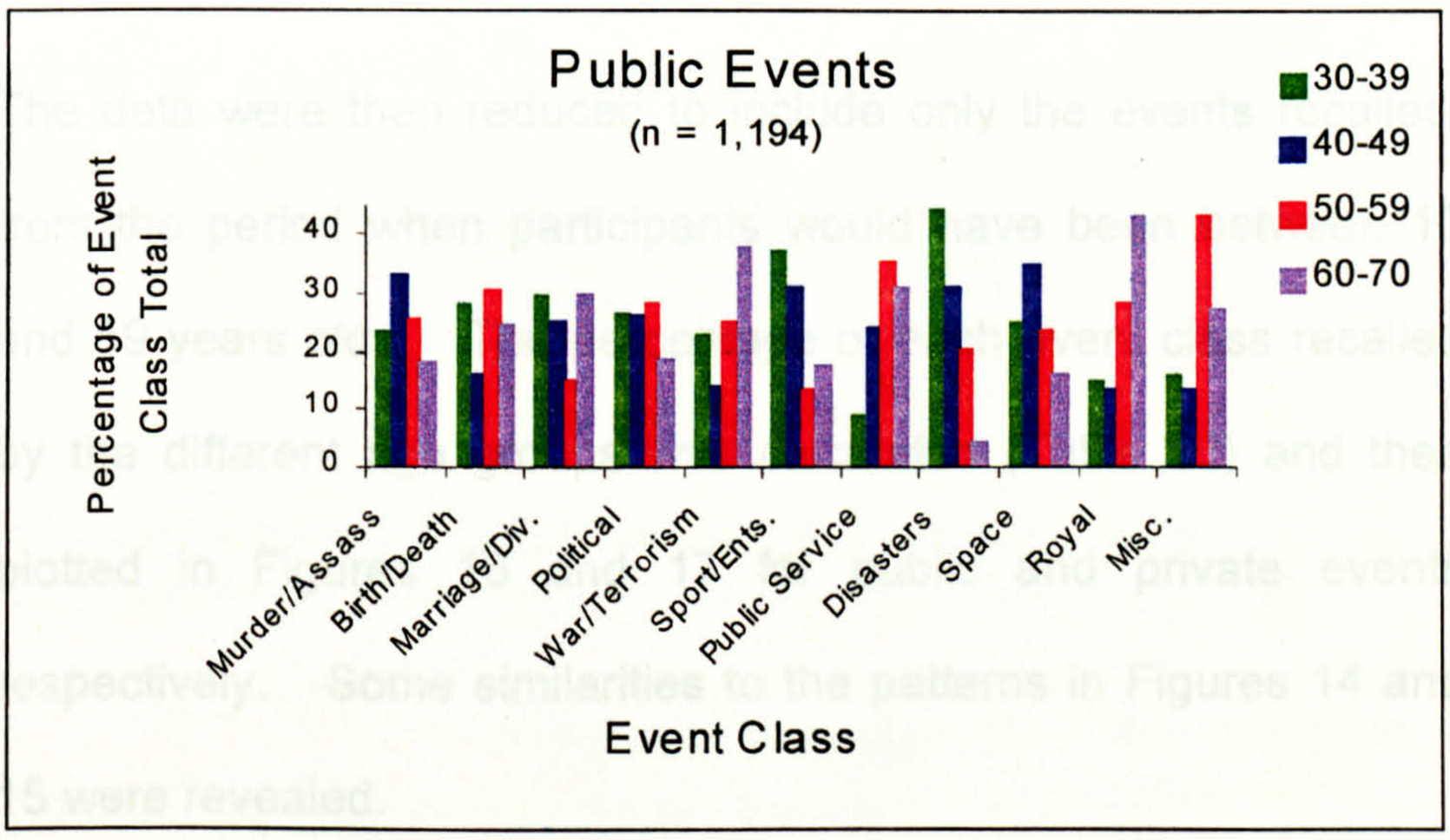

Figure 14. "Public Events". Percentage distribution of event class, by age group.

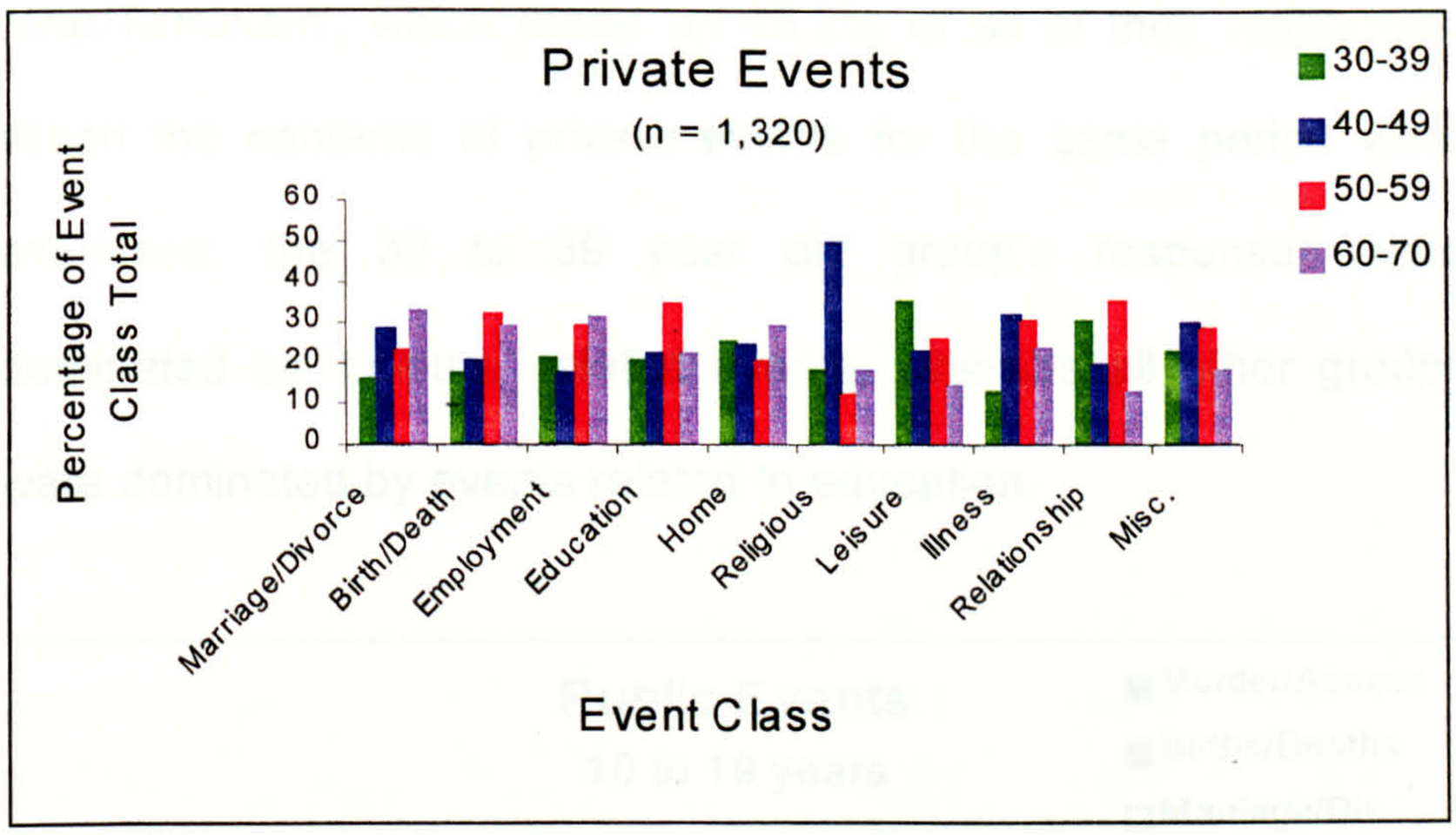

Figure 15. "Private Events". Percentage distribution of event class, by age group.

The data were then reduced to include only the events recalled, from the period when participants would have been between 10 and 19 years olds. The percentage of each event class recalled by the different age groups was calculated (Table 10) and then plotted in Figures 16 and 17 for public and private events respectively. Some similarities to the patterns in Figures 14 and 15 were revealed.

For public events, the 30 to 39 years group's responses were dominated by 'Political' events, which made up 26.8% of the total events recalled. For the 40 to 49 group 'Murder/Assassination' was the dominant event type (25.1%). No dominant event type was revealed for the 50 to 59 years group, and the 60 to 70 years old group's responses were dominated by events related to

'War/Terrorism', which made up 45.2% of all of their responses. When the contents of private events for the same period were examined, the 30 to 39 year old group's responses were dominated by 'Leisure' related events, whereas all other groups were dominated by events related to education.

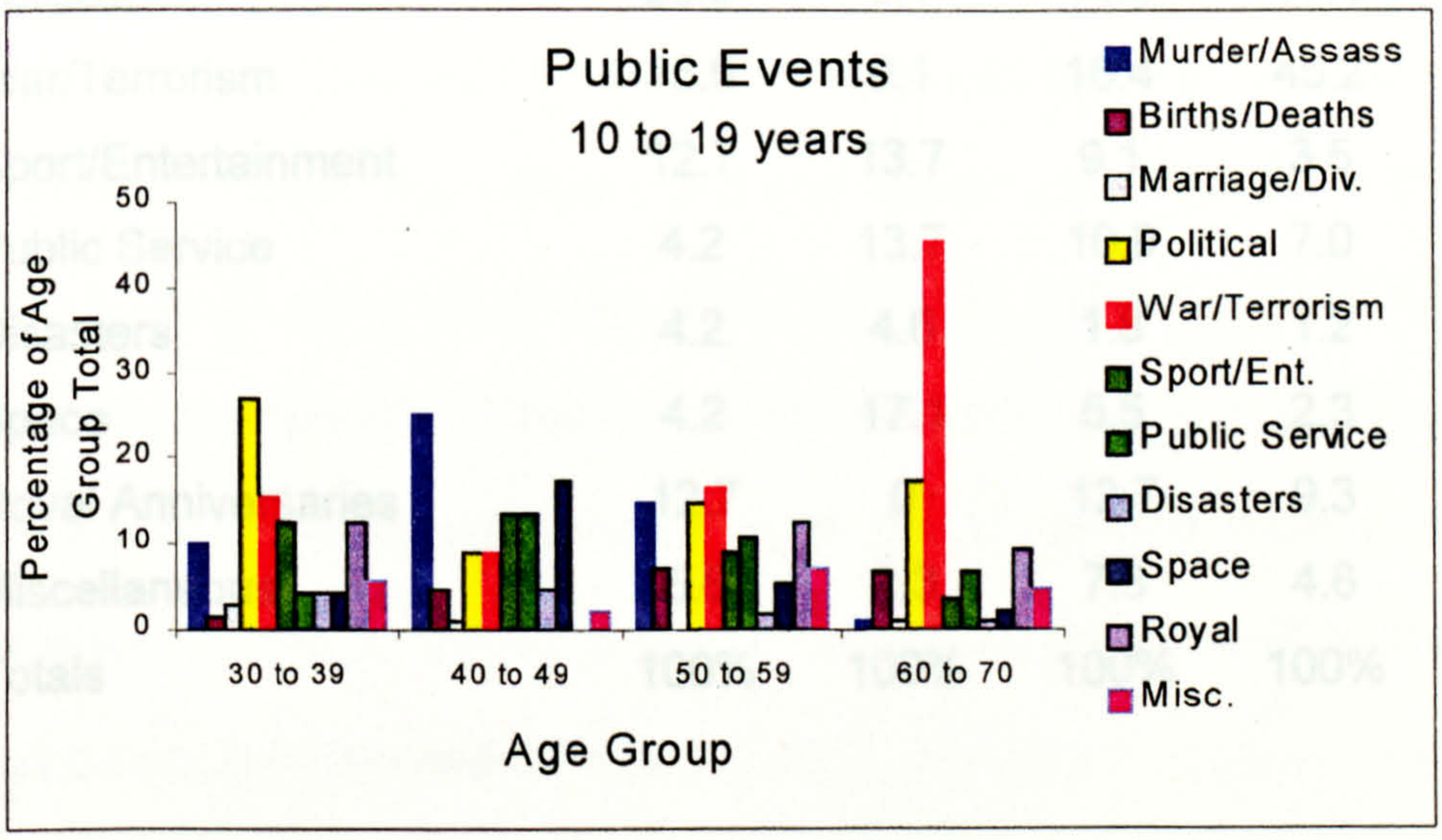

Figure 16. "Public Events". Percentage of memories of different classes, recalled from second decade, by age group.

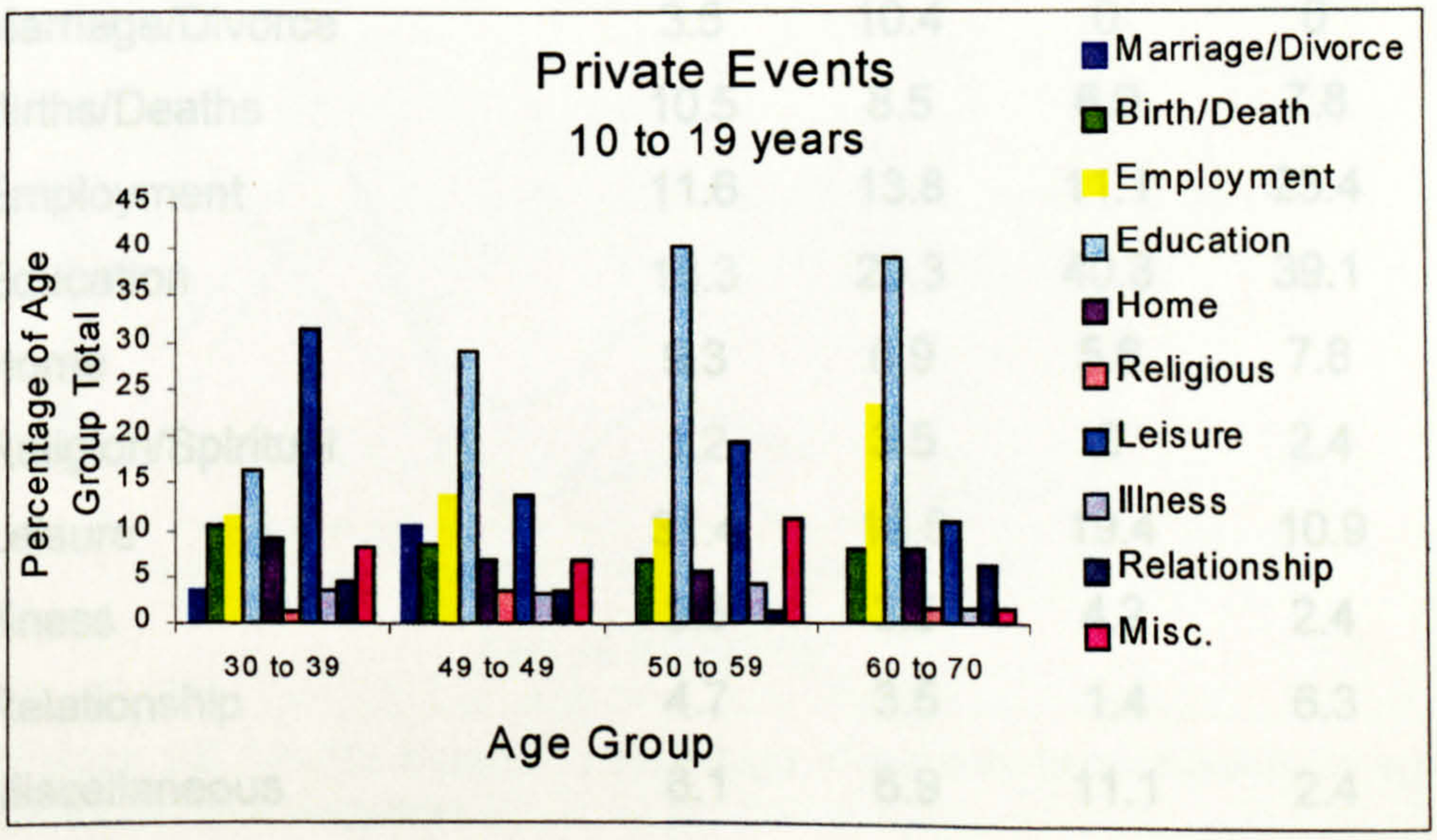

Figure 17. "Private Events". Percentage of memories of different classes, recalled from second decade, by age group.

Table 10. Public and Private Events. Distribution of Event Types, by age group, second decade (10 to19 years).

Public Events 2nd Decade (10 to 19 years)	30 - 39	40 – 49	50 – 59	60 - 70
Murder/Assassination	9.9	25.1	14.6	1.2
Births/Deaths	1.4	4.6	7.3	7.0
Marriage/Divorce	2.8	1.1	0	1.2
Political	26.8	9.1	14.6	17.4
War/Terrorism	15.5	9.1	16.4	45.2
Sport/Entertainment	12.7	13.7	9.1	3.5
Public Service	4.2	13.7	10.9	7.0
Disasters	4.2	4.6	1.8	1.2
Space	4.2	17.1	5.5	2.3
Royal Anniversaries	12.7	0	12.7	9.3
Miscellaneous	5.6	2.3	7.3	4.6
Totals	100%	100%	100%	100%

Private Events 2nd Decade (10 to 19 years)	30 – 39	40 – 49	50 – 59	60 - 70
Marriage/Divorce	3.5	10.4	0	0
Births/Deaths	10.5	8.5	6.9	7.8
Employment	11.6	13.8	11.1	23.4
Education	16.3	29.3	40.3	39.1
Home	9.3	6.9	5.6	7.8
Religion/Spiritual	1.2	3.5	0	2.4
Leisure	31.4	13.8	19.4	10.9
Illness	3.5	3.5	4.2	2.4
Relationship	4.7	3.5	1.4	6.3
Miscellaneous	8.1	6.9	11.1	2.4
Totals	100%	100%	100%	100%

Public Events – First Response

To further examine the data for generational differences in the types of knowledge recalled, the public events' data was reduced to include only the first responses and, therefore, the most salient events (Appendix 7). When plotted, according to the age of the participant at the time of the event, for each age group, distinct peaks in the 2nd decade for the 30 to 39 and 40 to 49 groups were revealed (Figure 18). This effect was obscured for the 50 to 59 and 60 to 70 years old groups by a World War II effect. It can be seen from Appendix 7, that for the 50 to 59 years old group, 6 out of a total of 10 events recalled from the 1st decade were War related. Of the 13 events in the 1st decade for the 60 to 70 years old group, 9 concerned the War.

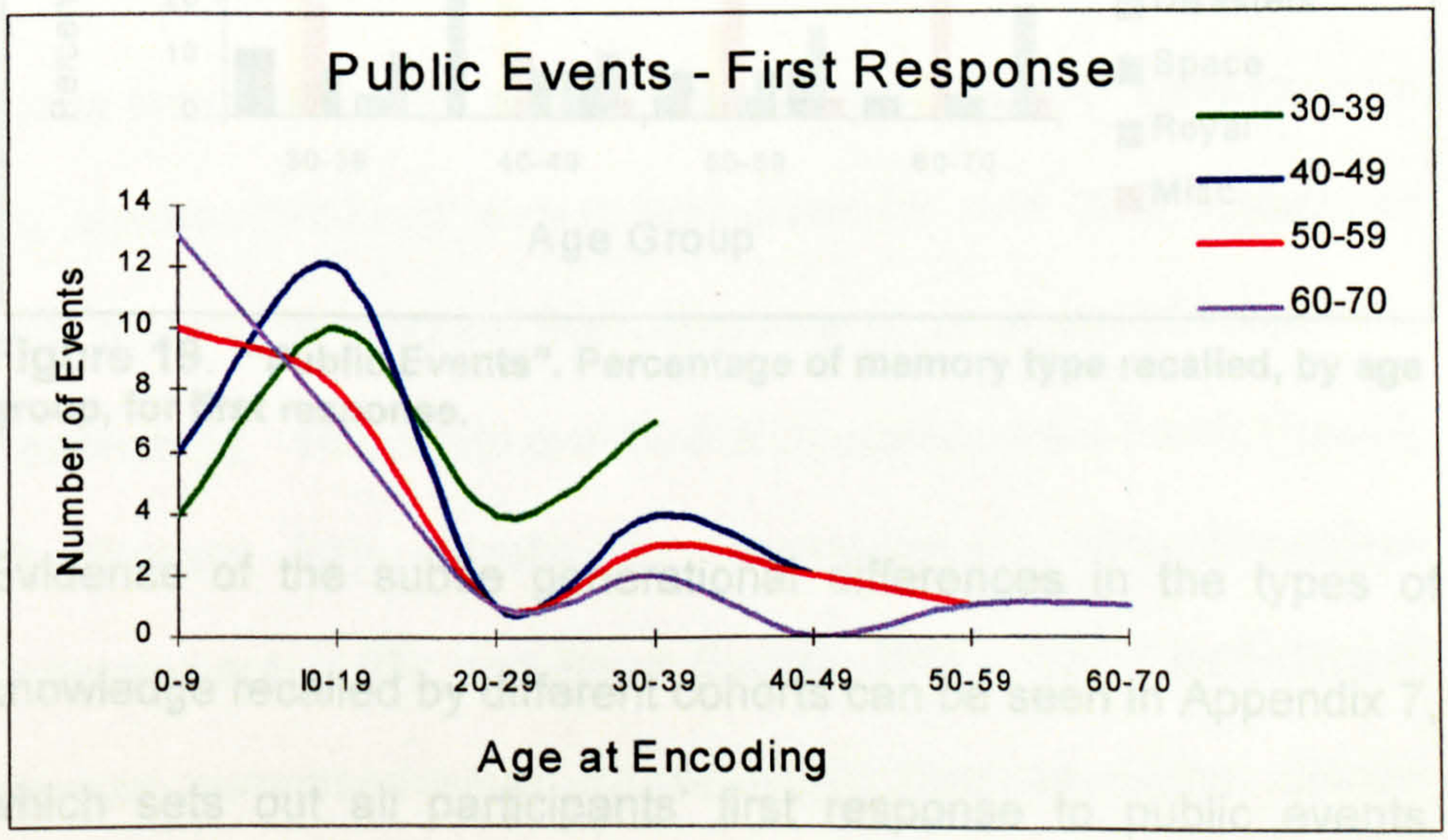

Figure 18. "Public Events". Percentage of memory type recalled, by age group, for first response.

Plotting the first public event data by memory type for each age group (Figure 19) revealed that, for each cohort, the dominant event types were similar to those revealed in Figure 16. 'Political' events remained the dominant response type for the 30 to 39 year olds (28%). 'Murder/Assassination' continued to dominate the 40 to 49 year olds' responses (24%). The dominant category for the 50 to 59 years old group was 'War/Terrorism' (28%), which remained the dominant type for the 60 to 70 year olds (52%).

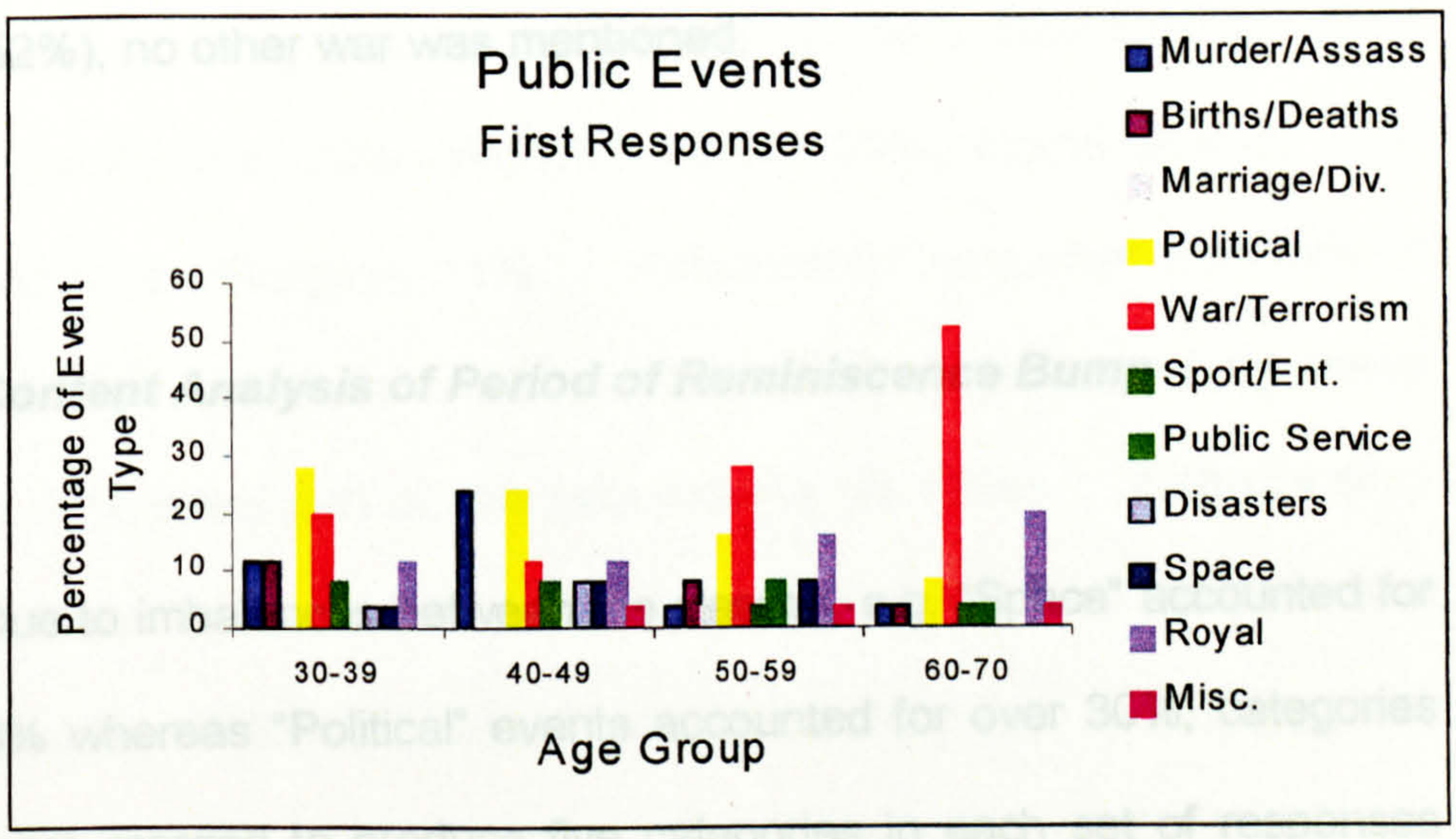

Figure 19. "Public Events". Percentage of memory type recalled, by age group, for first response.

Evidence of the subtle generational differences in the types of knowledge recalled by different cohorts can be seen in Appendix 7, which sets out all participants' first response to public events. Although experienced by all other groups, only the 30 to 39 years old group mentioned the wars in the Gulf and the Falklands,

Tianemen Square and the election of a female Prime Minister, the assassination of President Sadat, the Live Aid concert and the introduction of decimalization. This was also the only group not to mention the assassination of J. F. Kennedy. The 40 to 49 year olds made the only mentions of the disaster at Aberfan and the most frequent response was the assassination of J. F. Kennedy. The 50 to 59 years olds' first responses had the only mentions of the Festival of Britain and The Beatles. The majority of the responses made by the 60 to 70 years old group related to WW2 (52%), no other war was mentioned.

Content Analysis of Period of Reminiscence Bump

Due to imbalances between the classes, e.g. "Space" accounted for 3% whereas "Political" events accounted for over 30%, categories were merged to produce five categories in each set of responses (Appendix 5). For public events, the categories were Family(Royal), 9%; Political, 39%; War/Murder (assassination), 38%; Sport/Ents (entertainment), 10%; and News Events, 16%. The Family(Royal) category comprised news of marriages, divorces, births, deaths, anniversaries and news features related to prominent public figures, including the British Royal Family. The Political category

encompassed major political events such as resignations, elections, scandals, etc. The War/Murder category included acts of terrorism, events from various wars, famous murders and assassinations. Sports/Ents. was made up of mentions of famous sporting events and other public entertainment events, e.g. cup finals, rock concerts etc. The News category included all other responses and these involved disasters, natural and man made as well as other, not easily classifiable, events (e.g. bankruptcies, weather phenomena etc).

The five categories in private events were Relationship, 17%; Births/Deaths, 20%; Work/Education, 29%; Home/Leisure, 24% and Illness/Religion, 11%. 'Relationship' contained mentions of marriages, divorces and other relationship events all closely linked to, or a direct part of, the respondents' own lives. 'Births/Deaths' referred to these events in the respondents' own families and friends. 'Work/Education' included mentions of events from the respondents' own job, school days, university, education of own children etc. 'Home/Leisure' referred to experiences related to their home e.g. moving home, home improvements etc. 'Illness/Religion' included mentions of illness and religious experiences, as well as some unclassifiable responses. The percentages for different classes of both public and private events in each decade are shown in Table 11. Public events were plotted

in Figure 20, which shows that the peak point of recall for "Family/(Royal)", "War/Murder" is in the 2nd decade, when respondents were between 10 and 19 years old. "News" and "Sport/Ents" are equally frequent over the 2nd and 3rd decades (10 - 19 and 20 - 29 years), and "Political" events peak in the 4th decade (between 30 - 39 years). The data for private events were plotted (see Figure 21) and it can be seen that only the Work/Education related events peak in the 2nd decade. "Relationships", "Births/Deaths" and "Home/Leisure" all peak in the 2nd decade (20 - 29 years), with "Illness/Religion" peaking in the 4th and 5th decades (30 - 39 and 40 - 49 years).

Table 11. "Public and Private Events". Percentage of different classes of memories recalled, all participants (N=100)

Public Events	%	Private Events	%
War/Murder	26.7	Relationships	17.7
Political	28.0	Births/Deaths	20.0
Family/(Royal)	12.5	Work/Education	28.1
Sports/Ents.	9.4	Home/Leisure	23.3
News Events	23.4	Illness/Religion	10.9
Total	100%	100%	100%

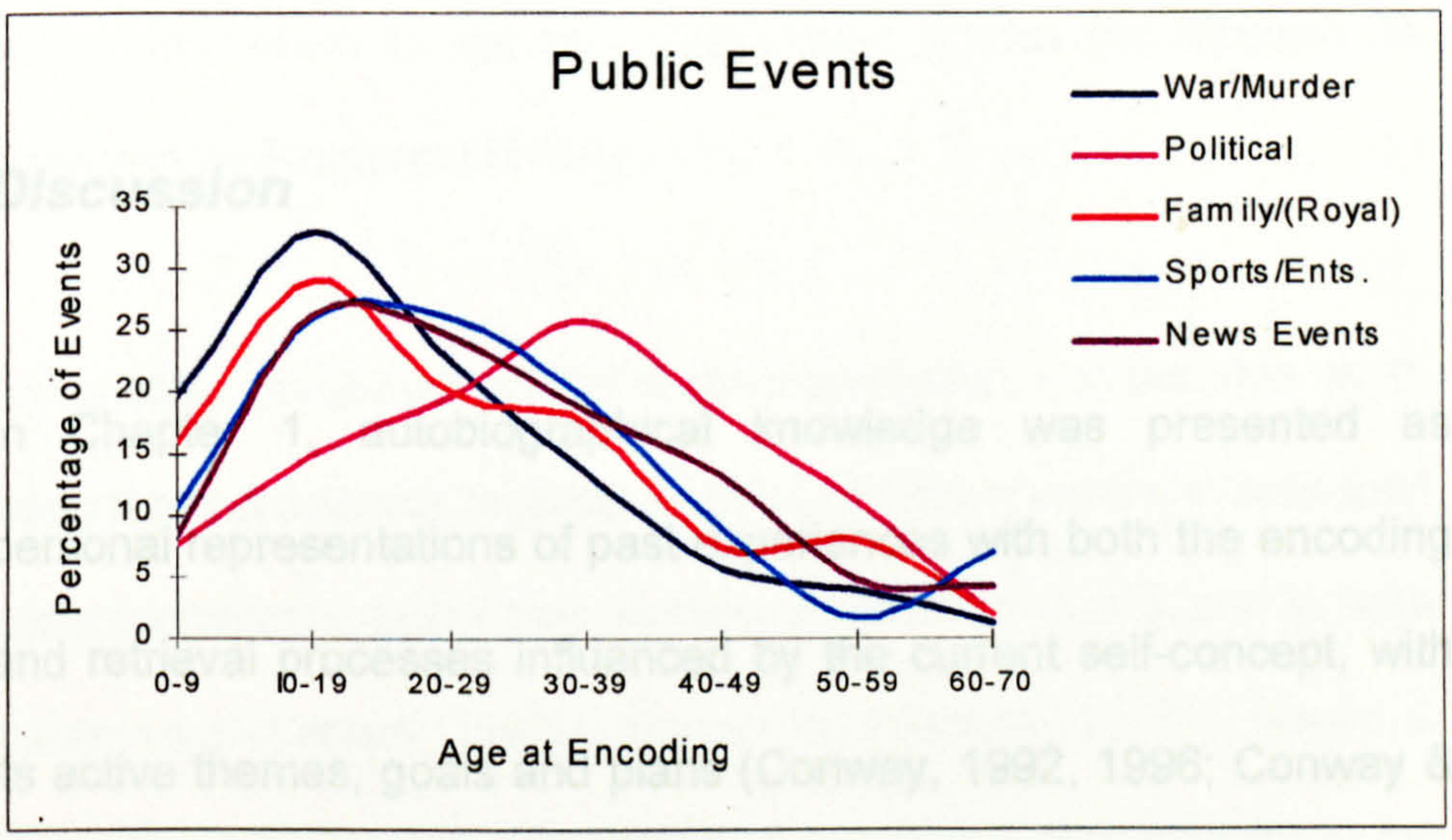

Figure 20. "Public Events". Lifespan retrieval curves for different classes, all participants (N=100).

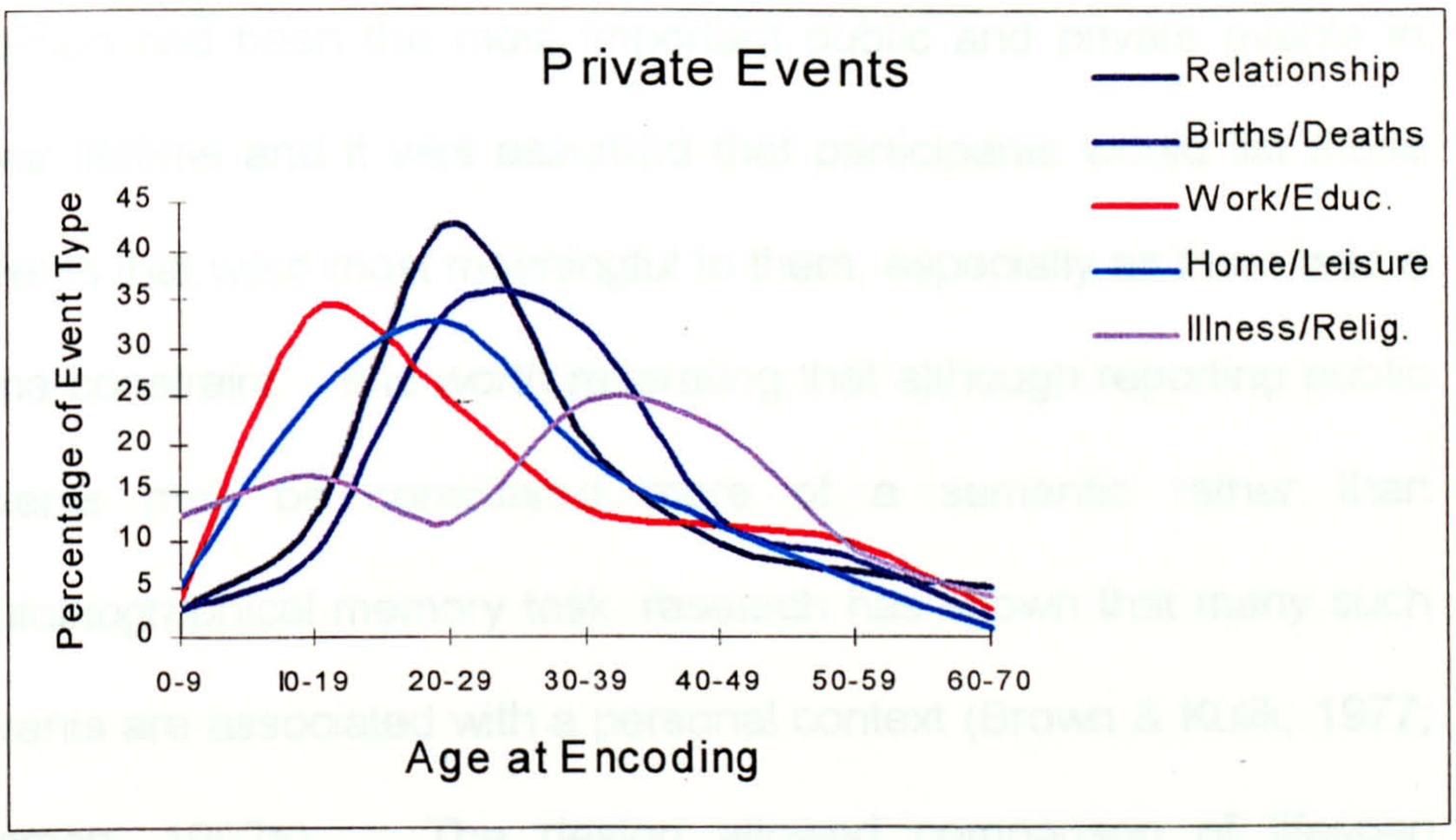

Figure 21. "Private Events". Lifespan retrieval curves for different classes, all participants (N=100).

Discussion

In Chapter 1, autobiographical knowledge was presented as personal representations of past experiences with both the encoding and retrieval processes influenced by the current self-concept, with its active themes, goals and plans (Conway, 1992, 1996; Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993). Also discussed was the influential role of the self that may result in preferential encoding and sampling of the autobiographical knowledge base and that results from past research, examining the retrieval of memories from across the lifespan, have offered evidence to support this (e.g. Conway & Haque, 1999, Fitzgerald, 1988;and, Schuman & Scott, 1989). With this study, participants were asked to list what in their

opinion had been the most important public and private events in their lifetime and it was assumed that participants would list those events that were most meaningful to them, especially as there was a time constraint. It is worth reiterating that although reporting public events may be considered more of a semantic rather than autobiographical memory task, research has shown that many such events are associated with a personal context (Brown & Kulik, 1977; Larsen, 1992a). The design allowed comparison of lifespan distributions for different event types and provided a large number of events with which to examine distribution across the lifespan as suggested by Fitzgerald (1988).

Firstly, although not part of the original prediction, it is perhaps worth noting that participants recalled significantly more private events than public, consistent with other studies contrasting public and private events (e.g. Larsen 1992b; Larsen & Plunkett 1987; Larsen & Thompson 1995). It is proposed that a superior performance in the wholly autobiographical memory task reflects the influence of the self, both at encoding and retrieval. Following upon the findings from Experiments 1 and 2, it was predicted that there would be a reminiscence peak in the 2nd decade for public events and the data did suggest some evidence to support this. Figure 13, which shows the curves for public events for each age group separately, revealed

that only the 40 to 49 and 60 to 70 groups showed a reminiscence peak in the 10 to 19 decade. The lack of an effect for the 30 to 39 years old group is, perhaps, misleading and may mask a reminiscence effect. Although the mean age of participants in this group was 35 years old, 44% were younger than 35, which might be regarded as young in terms of revealing the reminiscence bump phenomenon (Conway & Rubin 1993). Less easy to understand is the lack of effect for the 50 to 59 year olds. The most striking difference exhibited by this group was the very high percentage of events recalled from the 1st decade, up to 9 years old. And, perhaps, this is not surprising if one considers that this group was made up of people born pre, mid and post World War II (between 1938 and 1947), who lived in an area which was heavily bombed. Research has shown that war related events, such as bombing, deprivation or occupation are more salient in individuals with personal experience (e.g. Schuman, Akiyama, Knauper 1998; Scott & Zac 1993). This anomaly from the expected pattern is, therefore, perhaps understandable in terms of the influence of the self at encoding, reflecting privileged encoding of highly self-relevant experiences. Which also might explain why significantly more private events than public events were recalled overall ($p. < 0.02$).

Conway (1997b) proposed that generation units share common goals and that generation identity arises from the types of knowledge emphasised within a unit. He said that the sort of things that preoccupy a generation unit arise from the social forces they face and predicted that there would be generational differences in the types of memories emphasised within a unit. If one examines the event categories, there are, as predicted, some generational differences in the types of knowledge recalled, particularly from the period of generation identity, when participants would have been between 10 and 19 years old.

Perhaps the most interesting observation from the data is that it suggests that there are different patterns in the reminiscence for public and private events respectively. There is some evidence that recall of public events tends to peak in the early part of the bump, when participants would have been between 10 and 19 years old, whereas recall of private events peaks later, between 20 and 29 years. Based on this, and on the findings from Experiments 1 (Ambiguous Names) and 2 (Recalling Music and Films), it is proposed that the reminiscence bump may have two components. It was suggested earlier that the reminiscence peak, in the recall of memories from the period when rememberers would have been between 10 and 19 years old, may reflect privileged retention of

knowledge from an important stage in the development of the self. Again, Erikson's (1950; 1985) theoretical account of the development of the self across the lifespan proved a useful framework to help explain the findings of the current experiment.

Erikson described 8 psychosocial stages of development extending across the entire lifespan and proposed that each stage is characterised by a different conflict that the individual must resolve. He proposed that these conflicts, from birth to death, were as a result of social influences interacting with a physically and psychologically maturing organism. Conflicts arise as the environment makes new demands on the individual. The stages are not mutually exclusive, describing an epigenetic principle, Erikson proposed that each domain contributes to the formation of the total personality. Each has a time of special ascendancy, until all parts have arisen to form the functioning whole, and at any given point in the lifespan an individual is primarily engaged in the resolution of one of the stages. Issues of self development relating to past and future stages may also be present, but not dominant during the resolution of a particular stage. The Eriksonian stages that correspond, roughly, to the period of the reminiscence bump are identity vs. role confusion and intimacy vs. isolation. The identity stage, which corresponds roughly to the early part of the bump, was discussed earlier (p.35). It is a time

when individuals establish personal goals that, in one way or another, may endure for many years as an integral self is consolidated. The early part of the bump corresponds to a period when many individuals are undergoing a process of making an external, or generational, identity with their society, such as achieving a sense of identity in occupation, gender roles, politics etc. The Erikson stage that roughly corresponds to the latter part of the bump is the intimacy stage. The task for the developing self at this stage is the formation of intimate personal relations. According to Erikson, the focus at this time is on adult relations, outside the context of the family, and it may be the case that those experiences that relate most strongly to the goals of attaining intimacy are encoded in a way that makes them highly accessible.

The reminiscence bump has been observed, using a wide range of techniques and, as discussed earlier, there are a number of explanations for this phenomenon. The period of the bump represents a time during which many events are encountered which benefit from memory enhancing processes, including an increased effort to understand the experience. Although during the period there are, undoubtedly many experiences, which by virtue of their distinctiveness are well remembered, not all are new events. The findings of this and the previous study suggest that the two peaks

may reflect important knowledge about goal formation and goal attainment. Figure 20 revealed that, for public events, those associated with war, acts of terrorism, assassinations; the marriages, divorces, births and deaths of public figures; royal anniversaries and miscellaneous news items such as disasters, public services and space, were most frequently recalled from the early part of the bump. In contrast, Figure 21 revealed that recall of events associated with participants of marriages, divorces and other relationship episodes and events related to setting up home peaked in the latter part, in the decade from 20 to 29 years.

It is proposed that the reminiscence bump in the lifespan retrieval curve is a product of privileged encoding of experiences highly relevant to individuals during a critical phase of development and consolidation of the self and the results provide some evidence to support this view. Staying with Erikson, the early peak for public events corresponds roughly to a period when many individuals are undergoing a process of making an external or generational identity with their society. This entails identifying public events, belief systems, activities etc. that in some way are appropriate to the goals of the self during this period (Conway 1996 1997b; Conway & Pleydell-Pearce, 2000). These experiences are privileged in that they may be processed more deeply than experiences of other

types, both at the time and, also, perhaps, later in intense periods of rehearsal when they might be thought about or discussed. They may also be privileged by virtue of the way the knowledge is organised in long-term memory. Such experiences may form the bases of long-term memory structures, which will be used in the comprehension and representation of later, associated, public events (Conway & Haque 1999). Likewise, experiences from the latter part of the bump, which correspond to a time when the focus is on the development of intimacy in personal relationships, outside the context of the family, may also receive deeper encoding and privileged organisation.

Originally, this and the first studies were conducted to discover whether there would be differences in the types of knowledge emphasised by different generation units during the period of the reminiscence bump (Conway 1997b) and the data suggest some support for this. However, after observing two major components in the reminiscence bump that corresponded to different periods of the development of the self, the research broadened to encompass the whole of the lifespan. That is, away from generation identity, specifically, and towards investigating the influence of the developing self on the recall of memories from across the lifespan in older people.

CHAPTER 4

Is it Novelty?

However, before proceeding with an investigation of the patterns and content of recalled memories from across the lifespan in older adults, the question of the influence of novelty on recall remains unexplored. One explanation of the increased frequency of memories recalled from the period when adults, over the age of about 35 to 40 years old, would have been between 10 and 30 years old, is that memories from this period are more memorable because they are more novel. In their review of the explanations for the reminiscence bump, Rubin et al. (1998) considered novelty as a major factor in the accessibility of these memories. The novelty account emphasises cognitive stability and argues that the period between 10 and 30 years old represents the beginning of a period of cognitive stability, which follows an earlier period of rapid developmental change. They proposed that for recall, novelty had three main benefits: "more effort after meaning (Bartlett 1932)"; "a lack of, or perhaps a release from, proactive interference, because the novel event is different from what has preceded it"; and, "the first time that an event occurs, it should be more distinctive both because of its novelty and because more attention is paid to details that the

individual will learn to ignore" (p.14). The emphasis in the 'self' account is also on emerging stability, but it is the emerging stability of the self during adolescence and early adulthood (Erikson 1950). The 'self' account of the reminiscence bump suggests that memories of experiences from this period contain knowledge about goal formation and goal attainment. These experiences are highly accessible because they are the bases in the formation of lifelong goals. Of course, it has to be said that such experiences are also novel, or distinctive. However, the 'self' account views accessibility as the product of experiences which are novel in terms of relevance for the self. For example, 'novelty' as an explanation would not account for the Benson, Arai & Thielbar's (1990) (cited in Benson et al. 1992) observation that only one Tokyo citizen, out of a sample of 59, reported recalling a memory of hearing of the bombings of Hiroshima and Nagasaki. However, many of their participants reported air raids, experienced first-hand, when they would have been directly under threat of extinction. Schuman et al (1998) also noted that in their 1991 survey, although World War II accounted for 60.3% of 1st mentions and 2.5% of 2nd mentions of Japanese participants who were asked to name important events from the past 50 years, only about 2% of the sample mentioned the dropping of an atomic bomb on Japan and these tended to be younger participants. This occurred even though there was a reminiscence bump for older

participants for war related items. This, surely, is extraordinary as Baruma (1994) claimed that Hiroshima is "the supreme symbol of the Pacific War for the Japanese." (cited in Schuman et al 1998, p.20). These bombings were the first ever use of atomic weapons and, even during wartime when momentous events can occur in quick succession, they were highly novel events. It may be that recalling these atomic bombs which signalled defeat is damaging to national identity in such a collective society, which would be consistent with the 'self' account.

Simple in its design, the following study was conducted in an attempt to elicit the most novel events from participants' lives in order to discover whether there would be an increase in the frequency of items recalled from when they were between 10 and 30 years old.

Experiment 4 *Novelty and the Reminiscence Bump*

Method

Participants

49 adults, aged between 62 and 89 years (mean age 72 years). Participants were recruited through advertisements in local newspapers and billboards.

Design

A within subjects design was used in which age at encoding was a repeated measure with 8 levels (0 to 9 years; 10 to 19 years; 20 to 29 years; 30 to 39 years; 40 to 49 years; 50 to 59 years; 60 to 69 years; and 70 plus years).

Materials and Procedure

Participants were tested in small groups and were provided with a single sheet of paper, entitled "Novel events in your private life" and including instructions to "Quickly, list 5 important things that have happened only once in your life" on a single sheet of paper, which were also given verbally. This language was used because the researcher wanted to elicit the most distinctive events from

participants' lives. They then dated the responses with their age at the time of each event.

Results

Novel Events from Across the Lifespan

In total, participants listed 192 novel events (mean 3.92). The totals, means and standard deviations for each decade across the lifespan are shown in Table 12 and the percentage of novel events falling into each decade were plotted in Figure 22. Novel events were experienced across the lifespan and a large reminiscence effect (34.4%) was observed in the third decade when participants would have been between 20 and 29 years old. Bonferroni corrected contrasts (significance: p=0.007) revealed reliably more events were recalled from this decade (see Table 13). These also revealed that participants were just as likely to recall events from the 2nd decade (10 to 19 years) as they were from the 4th (30 to 39 years), 5th (40 to 49 years), 6th (50 to 59 years) and 7th (60 to 69 years) decades (see Table 14).

Table 12. "Novel Events". Totals, means and standard deviations for responses, by decade.

Decade	Count	Means	Standard Deviation
0-9 years	4	0.08	0.28
10-19 years	28	0.57	0.74
20-29 years	66	1.35	1.20
30-39 years	33	0.67	0.77
40-49 years	21	0.43	0.58
50-59 years	14	0.29	0.54
60-69 years	18	0.37	0.57
70 plus years	8	0.16	0.43
Total	192	3.92	1.34

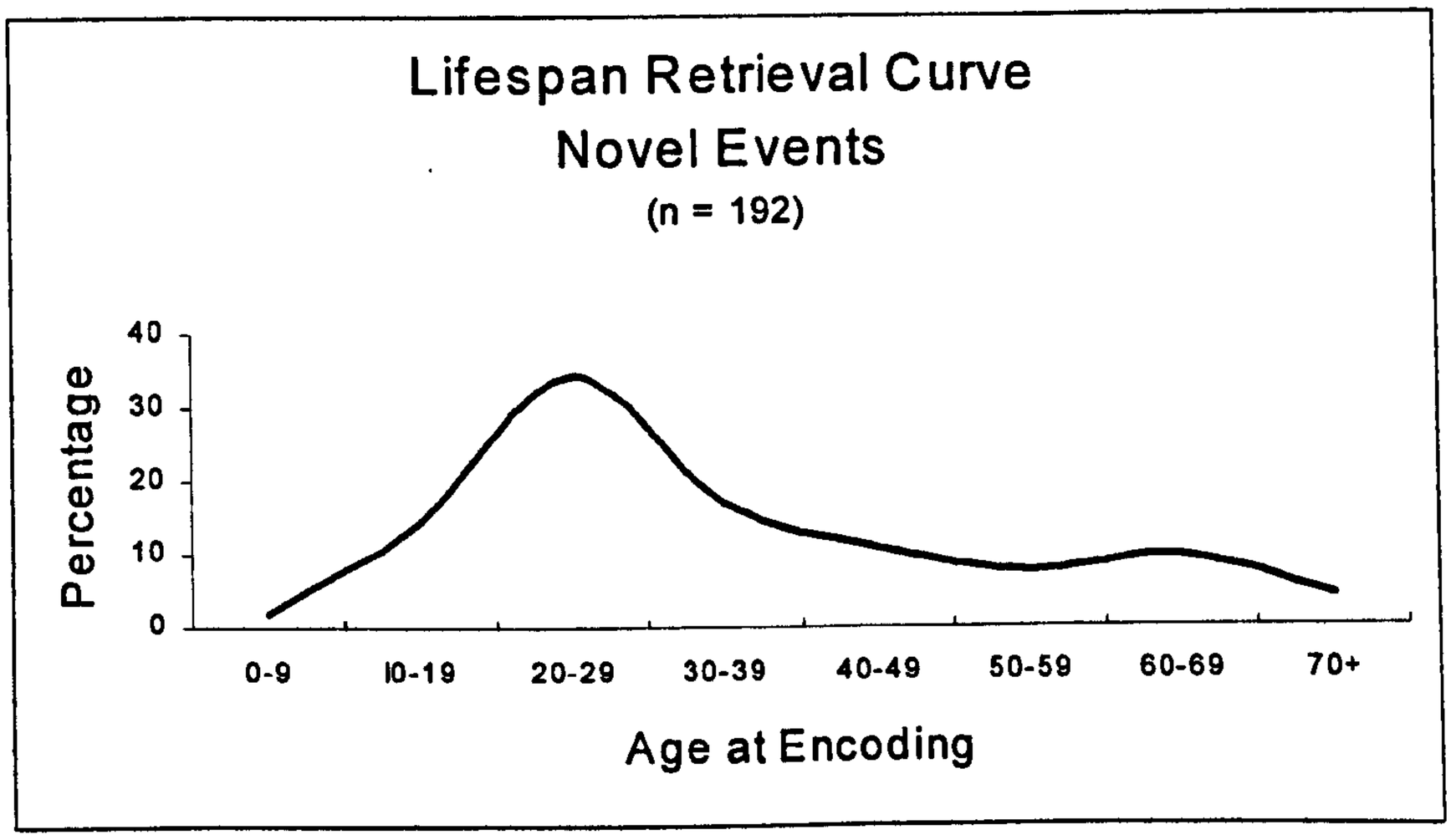

Figure 22. "Novel Events", Lifespan retrieval curve, (N=49).

Table 13. "Novel Events". Bonferroni corrected contrasts between 3rd and other decades. ***(significance = p0.007)***

Contrast	Significance Level
0-9 / 20-29 years	t (df. 1,48) = -7.06, p.<0.001
10-19 / 20-29-years	t (df. 1,48) = -3.75, p.<0.001
30-39 / 20-29 years	t (df. 1,48) = 3.07, p.<0.004
40-49 / 20-29 years	t (df. 1,48) = 4.58, p.<0.001
50-59 /20-29 years	t (df. 1,48) = 5.48, p.<0.001
60-69 / 20-29 years	t (df. 1,48) = 5.36, p.<0.001
70 plus / 20-29 years	t (df. 1,48) = -6.53, p.<0.001

Table 14. "Novel Events". Bonferroni corrected contrasts between 2nd and other decades. ***(significance = p0.007)***

Contrast	Significance Level
0-9 / 10-19 years	t (df. 1,48) = -4.32, p.<0.001
20-29 / 10-19 years	t (df. 1,48) = -3.75, p.<0.001
30-39 / 10-19 years	t (df. 1,48) = -0.63, n.s.
40-49 / 10-19 years	t (df. 1,48) = 1.04, n.s.
50-59 / 10-19 years	t (df. 1,48) = 2.04, n.s.
60-69 / 10-19 years	t (df. 1,48) = 1.46, n.s.
70 plus / 10-19 years	t (df. 1,48) = 3.22, p.<0.002

Content Analysis of Novel Events

The events were classified, using the categories developed in Study 3, and both the number and the percentage for each memory type are shown in Table 15. Table 16 contains the percentage of the different categories falling into each decade across the lifespan and these data are plotted in Figure 23.

Table 15. "Novel Events". Frequencies for different classes of memories recalled.

Category	Number Recalled	%
Relationship	48	25
Births/Deaths	34	17.7
Work/Education	42	21.9
Home/Leisure	60	31.3
Illness/Religion	8	4.2

Table 16. "Novel Events". Distributions for different classes of memory across the lifespan.

Decade	Relation-Ship %	Birth/ Death %	Work/ Education %	Home/ Leisure %	Illness/ Religion %
0-9	0	2.94	2.38	3.38	0
10-19	4.17	2.94	30.95	16.9	25
20-29	70.83	32.35	19.05	18.59	25
30-39	6.25	32.35	16.67	15.21	25
40-49	6.25	11.76	14.29	11.83	0
50-59	6.25	8.82	2.38	10.14	12.5
60-69	0	5.88	14.29	15.21	12.5
70+	6.25	2.94	0	8.45	0

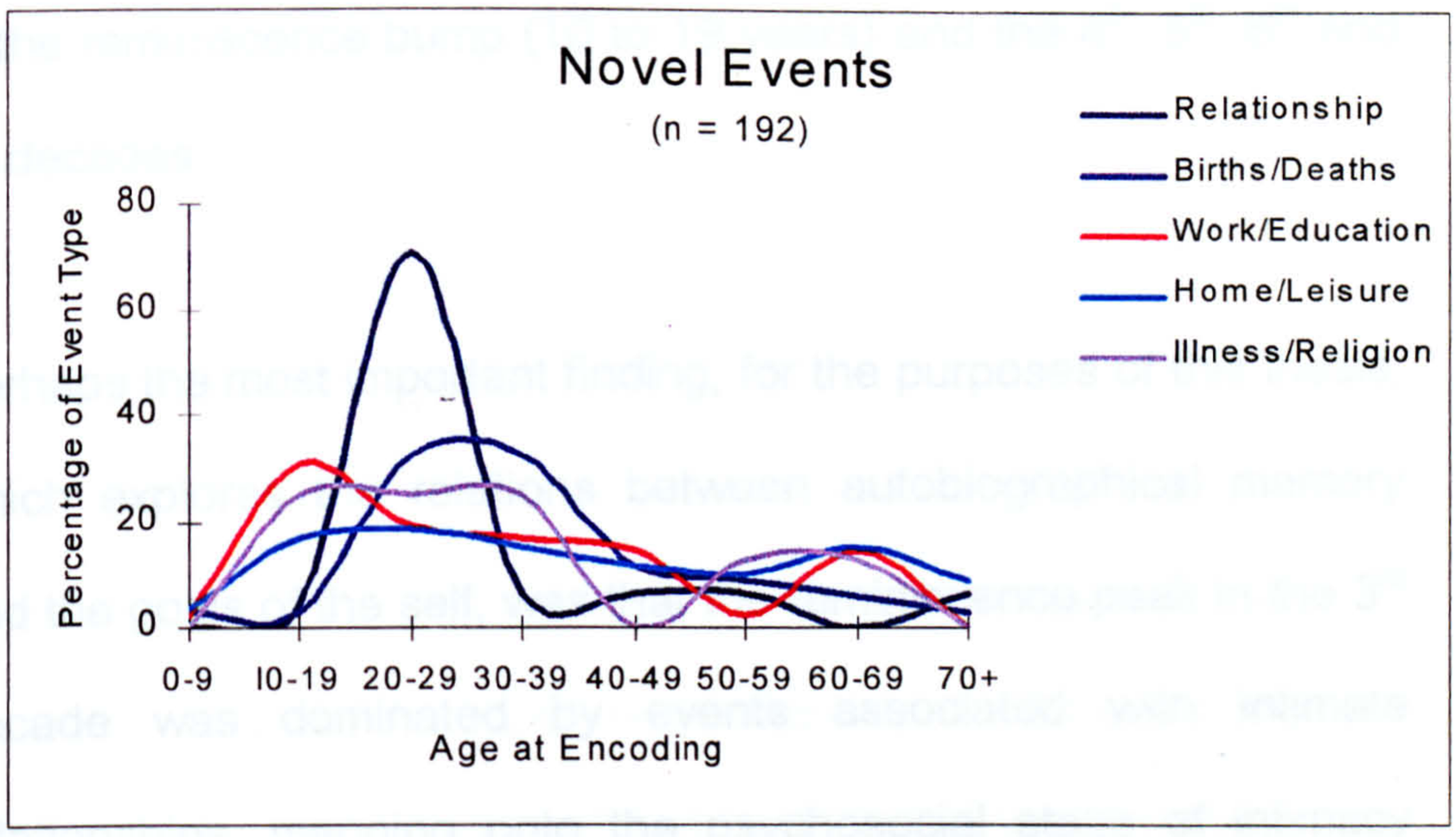

Figure 23. "Novel Events". Lifespan retrieval curves for different event classes.

Discussion

The data revealed that the participants had experienced novel events at every decade. A large reminiscence peak (34.4%) was observed in the third decade, when participants would have been between 20 and 29 years old. This 3rd decade peak replicates the reminiscence pattern observed for private events in Study 3 and, lends some support to the novelty hypothesis (e.g. Rubin et al, 1998). However, the reminiscence peak is limited to the latter part of the reminiscence bump. No statistical significance was revealed between the number of events recalled from the early part

of the reminiscence bump (10 to 19 years) and the 4th, 5th, 6th and 7th decades.

Perhaps the most important finding, for the purposes of this thesis; which explores the relations between autobiographical memory and the goals of the self, was that the reminiscence peak in the 3rd decade was dominated by events associated with intimate relationships, mapping onto the psychosocial stage of intimacy versus isolation and replicating the findings of Study 3. Staying with the Erikson's psychosocial stages theme, it was also interesting to note the reminiscence peak in the 2nd decade, between 10 and 19 years old, for Work/Education type events. Close inspection of the events recalled from the Work/Education peak revealed 77% (10 of 13) were work related. One of the benefits of work is that it provides individuals with an identity, a self-concept. Although participants recalled Work/Education type events across the entire lifespan, the increase in recall from the 2nd decade maps onto the psychosocial stage of identity.

Although not statistically significant, it was interesting that when specifically instructed to recall novel events, participants recalled more from the 4th decade (30 to 39 years) than from the 2nd (10 to 19 years). The novelty account predicts an increase in recall in

the period of the reminiscence bump, between 10 and 30 years. The high number of items recalled from the 4th decade (30 to 39 years) lends some support for the argument that highly novel events occur across the lifespan.

However, the present study suffered from a number of flaws. For example, eliciting the most distinctive events from participants' lives by using cues such as "important" and "happened only once in your life" led to recall of events which had happened only once, and generally, these were 'one-off' events. Another class of novel events, 'first-time' events, were, because of the instructions, barely sampled at all. This is important because the novelty explanation proposes that the increased frequency in recall observed in items from the period between 10 and 30 years is the product of lots of first time experiences that benefit from the best conditions for memory: i.e. novelty and cognitive stability. That, as novel items, they are unlikely to suffer from interference with greater attention being paid to the detail and, with the benefit of stable organisation, the cues remain the same at encoding and retrieval. The increased frequency during the period of the reminiscence bump then, is thought to reflect 'firsts', which serve as prototypes and as such are well retrieved and rehearsed.

A further methodological problem was that the experimental booklet was entitled "Novel events in your private life", which, in effect, could limit what participants would report.

A more sensitive instruction would have asked participants to recall novel events of any type, i.e. unique 'one-off' as well as 'first-times'. This could, perhaps, have been best achieved by providing a simple definition for the term 'novel events', for example, experiences that are, or were, unique at the time of the first experience.

CHAPTER 5

Influence of Self on the Retrieval of Memories from Across the Lifespan

From the data collected in the earlier experiments, it has been proposed that the reminiscence bump found in the lifespan retrieval curve, reflects privileged encoding of highly self-relevant experiences during a critical phase of development and consolidation of the self. Examination of the data suggested a fit between the content of these highly accessible memories and two of the psychosocial stages (identity and intimacy) described by Erikson (1950, 1968 and 1985). These data are consistent with the view that the goals of the working self impose a powerful influence at encoding (Conway & Pleydell-Pearce, 2000). They are also consistent with the findings of other researchers who have observed increased recall of goal and self related autobiographical memories (Conway & Haque 1999; Fitzgerald 1988; Markus 1977; McAdams 1985; 1993; McAdams, Diamond de St. Aubin & Mansfield 1997; Singer & Salovey 1993; Thorne 1995). However, the focus of the studies conducted so far has been on the period of the reminiscence bump, when the rememberers would have been

between 10 and 30 years old. But what of the other highly accessible memories, those recalled from outside the 10 to 30 year period?

The theoretical account of autobiographical memory already proposed (Conway & Pleydell-Pearce, 2000) predicts that accessible memories are the product of privileged encoding of self-relevant experiences. The self is deemed to be a set of currently active goals, which control access to the autobiographical knowledge base. This self, together with the knowledge base form a memory system referred to as the Self-Memory System. Within this view, it is surmised that knowledge is both accessed and represented in terms of goal-relatedness, and that encoded knowledge is an enduring, if indirect, record of past self-relevant goals.

Encouraged and intrigued that memories from the bump mapped onto the goals of the developing self as described by Erikson (1950/1985), the studies to be presented examined the content of all of the most accessible memories from across the lifespan in older adults.

In his writings, Erikson discussed the tasks, or goals, that would preoccupy individuals during the psychosocial stages of development throughout the lifecycle. Although he described eight psychosocial stages, the first four, from infancy through to school age, were collapsed into one stage, referred to hereafter as childhood. Not only because, as a consequence of 'childhood amnesia' (Wetzler & Sweeney 1986), it would be unlikely that participants would be able to recall memories related to the earliest psychosocial crises, infancy, for example, but also because some support already exists for the goal-relatedness of early memories (Thorne 1995). Using a sample of 23-year olds, Thorne's (1995) study investigated whether the memories of these young people might "reflect developmentally prior concerns" (p.140) and found that, when interviewed, her participants recalled memories which conformed to what she called 'developmental truths'. For example, memories about wanting help and encounters with parental figures tended to come from the childhood period. Memories of encounters with friends and memories about the need for intimacy increased with age. Few memories about wanting to help others were recalled. Thorne (1995) also reported that her participants were not aware of the personal goals reflected in their memories and concluded that this suggested automatic encoding

and retention of social motives, consistent with the Self-Memory System proposed by Conway & Pleydell-Pearce (2000).

Appendix 8 contains an abbreviated version of the chart printed in Erikson (1985) and shows the defining crisis at a particular lifecycle stage and its associated strengths and weaknesses. Although discussed earlier, it's perhaps worth, briefly, reiterating Erikson's view of the epigenetic process of development. Although a stage theory, there is no exact duration for each stage; individuals don't finish with one and start on another, each stage contributes to the whole. Within this epigenetic scheme, each item is only a later version of a previous one the salient stage has its roots in earlier and consequences in later stages. In Chapter 3, the preoccupations existing at the psychosocial stages of identity vs identity confusion and intimacy vs isolation were discussed. But to examine memory content across the lifespan, the other stages had to be considered. Erikson's second adult stage is the psychosocial crisis of generativity vs self-absorption and stagnation, characterised as the emergence of a commitment "to *take care of* the persons, products, and the ideas one has learned *to care for*" (p.67). It relates, therefore, to individuals' production as well as progeny. Mature adults also need to be needed and at generativity, individuals are primarily occupied by caring for and

looking after what has been generated and the establishment of guidelines for upcoming generations. They may be concerned with issues such as the environment, what kind of world the next generation will inherit, or equality. "Care is the widening concern for what has been generated by love, necessity or accident: it covers the ambivalence adhering to irreversible obligation" (Erikson, 1964, p.131). Failure to achieve generative enrichment may result in regression to earlier stages leaving the individual with a sense of impoverishment and stagnation.

At the end of the lifecycle, the goal for the individual is the resolution of the psychosocial stage of integrity vs despair. Integrity is achieved after a fulfilling generativity stage and when the individual has become reconciled to the successes and failures of existence. It can be characterised as having achieved a sense that life has had some order and meaning. This sense of wholeness can offset a feeling of being finished. Its counterpart, despair, is often a continuing sense of stagnation and the individual may be left with a feeling that life has been meaningless and that it is too late to try to change things. There may be a fear of, or wish for, death.

The purpose of the next two studies was to investigate whether memories from different lifetime periods would correspond to Erikson's theoretical account of development across the lifespan and, at the same time, test the goal-relatedness hypothesis of Conway & Pleydell-Pearce (2000). If this is correct, memories recalled from different ages should be predominated by a content that corresponds to the psychosocial stage at the time. The 'Wish' component of the coding system developed by Thorne (1995) formed the basis for the coding system used (see Appendix 9). In her interview study, memories of encounters were deemed 'codable' when they involved "what the participant wanted from the other person and the participant's assessment of the outcome" (p.144). 'Wish' was defined as "What the participant wishes, needs or intends in relation to the other person" (p.145), or put differently, their goal at the time of the encounter. The coding system was, therefore, developed utilising the primary concerns active at each stage of the developing individual, as suggested by Erikson's psychosocial theory.

It was predicted that the most accessible memories, from across the lifespan, would reflect the goals of the current working self at the time of encoding and would correspond to the Eriksonian psychosocial stages.

Experiment 5 *Retrieval of memories from Across the Lifespan - 'Erikson 1'*

Method

Participants

50 adults, aged between 62 and 89 years (mean 71.8 years), were recruited through advertisements in local newspapers and billboards. Of these, 2 subjects were subsequently excluded from the analyses as they failed to comply with the instructions. The remaining participants were 22 men, mean age 72.1 years and 26 women, mean 71.6 years. Participants were paid £5.00.

Design

A within-subjects design was used, in which lifetime period was a repeated measure with 7 levels (0 to 9 years; 10 to 19 years; 20 to 29 years; 30 to 39 years; 40 to 49 years; 50 to 59 years and 60 plus years). The reported memories were coded for memory-type and, further, coded for psychosocial stage (Erikson 1950, 1985). Examples of the coding system are shown in Appendix 9. Memories where the focus was judged to match the characteristics of a category were coded. Another professional checked memory classifications and 89% agreement was reached. Psychosocial stage was the dependent measure. For the purpose of this study,

Erikson's (1950, 1985) psychosocial stages (Basic Trust vs Basic Mistrust; Autonomy vs. Shame, Doubt; Initiative vs Guilt and Industry vs. Inferiority), were collapsed into one variable, Childhood. The remaining variables were Identity vs Identity Confusion, Intimacy vs Isolation, Generativity vs Stagnation and Integrity vs Despair. Participants also rated each memory event for importance, vividness, intensity and rehearsal, on a five point scale where 1 = low and 5 = high.

Materials and Procedure

After an initial pilot study, participants were asked to recall autobiographical memories from different lifetime periods, with their responses being recorded in an experimental booklet. Instructions which were given both verbally and on every page of the experimental booklet required that, in response to a lifetime period cue, they write a brief description of the first memories to come to mind. They were also instructed that each memory should be of an event that occurred over a period of seconds, minutes, hours, but no longer than a day. Also, that they should include where they were at the time; what they were doing; who was there; how they felt and any other details that came to mind. When completed, each description was rated, on a 5-point scale for importance, vividness, intensity and rehearsal. Appendix 10

shows the rating scale. Participants, who were tested in small groups, spent 5 minutes on each lifetime period. After 4 minutes, they were instructed to complete the memory they were working on and not to start on a fresh one.

Results

Recall Across the Lifespan

In total 552 memories were collected (mean 11.5). The percentage of memories falling into each of the lifetime periods was calculated and is shown in Table 17. Although participants were given an equal amount of time to recall memories from each lifetime period, 35.2% of the memories were recalled from the period when participants were aged between 10 to 29 years. This is shown in the broken line in Figure 24. After coding, 102 unclassified memories were excluded from further analyses. These, generally, contained knowledge that could be classified in more than one category or contained only brief details of an event. The remaining 450 memories were plotted and a similar percentage, 34.9%, memories were from the 10 to 29 year period. The solid line in Figure 24 represents the lifespan retrieval curve for coded memories.

Table 17. "Erikson 1". Memories recalled from each decade across the lifespan, all memories and coded memories.

Condition	All Memories (n=552)	%	Coded Memories (n=450)	%
0-9 years	86	15.6	80	17.8
10-19 years	103	18.7	81	18.0
20-29 years	91	16.5	76	16.9
30-39 years	77	13.9	62	13.8
40-49 years	70	12.7	56	12.4
50-59 years	60	10.9	45	10.0
60+ years	65	11.8	50	11.1

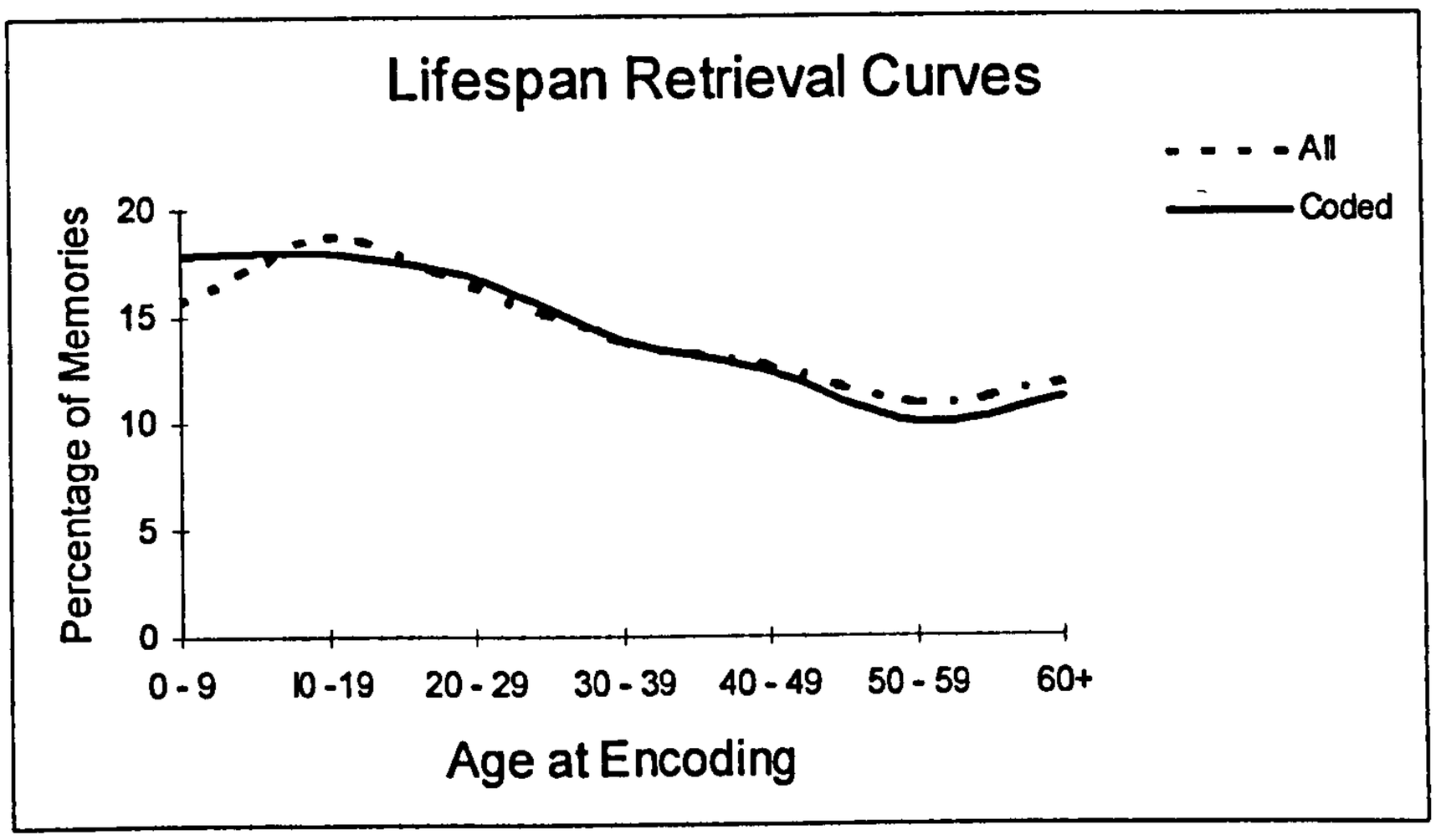

Figure 24. "Erikson 1". Lifespan retrieval curves for coded and all memories

Psychosocial Stages

Table 18. "Erikson 1". Mean numbers and standard deviations of memories classified in each psychosocial stage, by decade of encoding.

Condition (N=48)	Childhood Mean	SD	Identity Mean	SD	Intimacy/ Mean	SD	Generativity Mean	SD	Integrity/ Mean	SD
0-9 yrs	1.44	0.81	0.19	0.45	0.0	0.0	0.04	0.20	0.0	0.0
10-19 yrs	0.44	0.65	1.10	0.93	0.06	0.25	0.08	0.28	0.0	0.0
20-29 yrs	0.04	0.20	0.42	0.68	0.69	0.69	0.44	0.58	0.0	0.0
30-39 yrs	0.08	0.28	0.19	0.39	0.29	0.46	0.71	0.74	0.02	0.14
40-49 yrs	0.06	0.25	0.19	0.49	0.15	0.36	0.77	0.72	0.0	0.0
50-59 yrs	0.0	0.0	0.21	0.46	0.15	0.36	0.52	0.58	0.06	0.32
60+ yrs	0.0	0.0	0.17	0.38	0.23	0.43	0.35	0.53	0.29	0.46

A 7 x 5 (lifespan period x stage) ANOVA revealed significant effects for both lifespan period, $F(6, 282) = 7.72$, $MSe = 0.12$, $p.<0.001$ and stage, $F(4, 188) = 23.63$, $MSe = 0.28$, $p.<0.001$ and a significant interaction, $F(24, 1128) = 29.59$, $MSe = 0.21$, $p.<0.001$.

As there was a significant interaction Simple Main Effects for Repeated Measures Analyses, to explore the effect of lifespan period on each psychosocial stage, were conducted and these revealed significant effects for each stage: Childhood, $F(6, 1128) = 399.686$, $MSe = 0.21$, $p.<0.001$; ID/ID Confusion $F(6,1128) = 161.587$, $MSe = 0.21$, $p.<0.001$; Intimacy/Isolation $F(6,1128) = 70.381$, $MSe = 0.21$, $p.<0.001$; Generativity/Stagnation $F(6,1128) = 109.129$, $MSe = 0.21$, $p.<0.001$; and Integrity/Despair $F(6,1128) = 15.846$, $MSe = 0.21$, $p.<0.001$. The distributions across the

lifespan for each psychosocial stage, in percentage terms, are shown in Figure 25. Bonferroni corrected contrasts revealed: reliably more childhood type memories were recalled from the first decade (0 to 9 years); ID/ID Confusion type memories from the second (10 to 19 years); intimacy/isolation type memories from the third (20 to 29 years); generativity/stagnation type were spread across the adult years; and, integrity/despair types from the end of the lifecycle. (see Table 19).

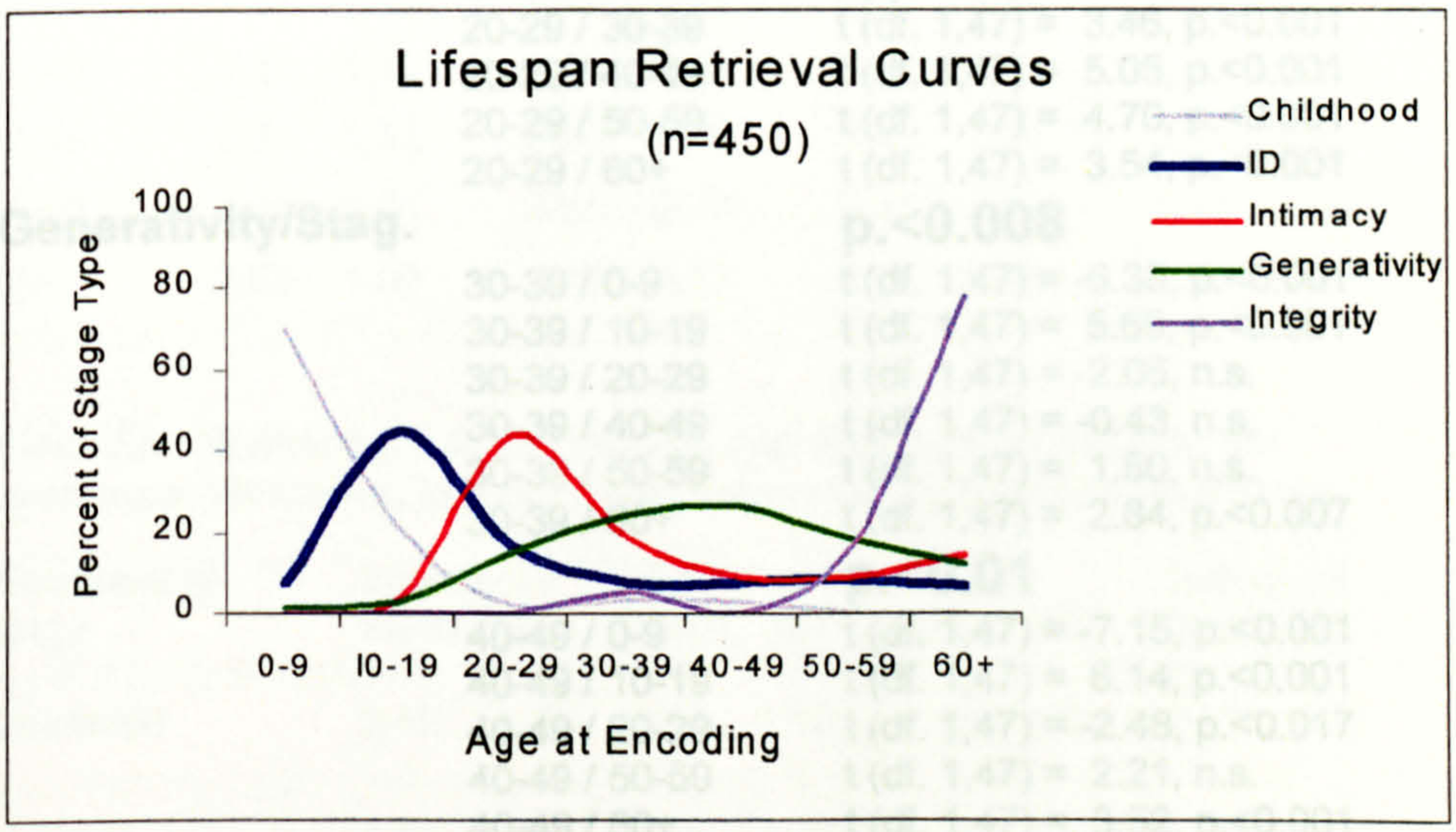

Figure 25. "Erikson 1". Percentage distribution of memories across the lifespan, classified by psychosocial stage.

Table 19. "Erikson 1". Bonferroni corrected contrasts between decades, for each psychosocial stage.

Psychosocial Stage	Contrast	Significance Level
Childhood		**p.<0.008**
	0-9 / 10-19	t (df. 1,47) = 17.51, p.<0.001
	0-9 / 20-29	t (df. 1,47) = 11.13, p.<0.001
	0-9 / 30-39	t (df. 1,47) = 11.56, p.<0.001
	0-9 / 40-49	t (df. 1,47) = 11.33, p.<0.001
	0-9 / 50-59	t (df. 1,47) = 12.50, p.<0.001
	0-9 / 60+	t (df. 1,47) = 12.50, p.<0.001
ID/ID Confusion		**p.<0.008**
	10-19 / 0-9	t (df. 1,47) = -7.09, p.<0.001
	10-19 / 20-29	t (df. 1,47) = 4.01, p.<0.001
	10-19 / 30-39	t (df. 1,47) = 6.18, p.<0.001
	10-19 / 40-49	t (df. 1,47) = 6.06, p.<0.001
	10-19 / 50-59	t (df. 1,47) = 5.99, p.<0.001
	10-19 / 60+	t (df. 1,47) = 6.51, p.<0.001
Intimacy/Isolation		**p.<0.008**
	20-29 / 0-9	t (df. 1,47) = -6.91, p.<0.001
	20-29 / 10-19	t (df. 1,47) = -5.49, p.<0.001
	20-29 / 30-39	t (df. 1,47) = 3.46, p.<0.001
	20-29 / 40-49	t (df. 1,47) = 5.05, p.<0.001
	20-29 / 50-59	t (df. 1,47) = 4.70, p.<0.001
	20-29 / 60+	t (df. 1,47) = 3.54, p.<0.001
Generativity/Stag.		**p.<0.008**
	30-39 / 0-9	t (df. 1,47) = -6.38, p.<0.001
	30-39 / 10-19	t (df. 1,47) = 5.69, p.<0.001
	30-39 / 20-29	t (df. 1,47) = -2.05, n.s.
	30-39 / 40-49	t (df. 1,47) = -0.43, n.s.
	30-39 / 50-59	t (df. 1,47) = 1.50, n.s.
	30-39 / 60+	t (df. 1,47) = 2.84, p.<0.007
		p.<0.01
	40-49 / 0-9	t (df. 1,47) = -7.15, p.<0.001
	40-49 / 10-19	t (df. 1,47) = 6.14, p.<0.001
	40-49 / 20-29	t (df. 1,47) = -2.48, p.<0.017
	40-49 / 50-59	t (df. 1,47) = 2.21, n.s.
	40-49 / 60+	t (df. 1,47) = 3.52, p.<0.001
		p.<0.0125
	50-59 / 0-9	t (df. 1,47) = -6.09, p.<0.001
	50-59 / 10-19	t (df. 1.47) = 4.45, p.<0.001
	50-59 / 20-29	t (df. 1,47) = -0.75, n.s.
	50-59 / 60+	t (df. 1,47) = 1.59, n.s.
Integrity/Despair		**p. <0.008**
	0-9 / 60+	t (df. 1,47) = -4.40, p.<0.001
	10-19 / 60+	t (df. 1,47) = -4.40, p.<0.001
	20-29 / 60+	t (df. 1,47) = -4.40, p.<0.001
	30-39 / 60+	t (df. 1,47) = -3.80, p.<0.001
	40-49 / 60+	t (df. 1,47) = -4.40, p.<0.001
	50-59 / 60+	t (df. 1,47) = -2.68, n.s.

Encoding Factors[2]

Table 20. "Erikson 1". Mean ratings, and standard deviations, for Importance, Vividness, Intensity and Rehearsal.

(n=450)	Mean	SD
Importance	3.29	1.30
Vividness	3.54	0.92
Intensity	3.36	1.14
Rehearsal	3.10	0.97

Table 21. "Erikson 1". Mean ratings, and standard deviations, for Importance, Vividness, Intensity and Rehearsal, by decade at encoding.

Decade	Importance		Vividness		Intensity		Rehearsal	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
0-9	2.64	1.32	3.27	1.07	2.86	1.19	2.66	0.85
10-19	2.96	1.24	3.38	0.87	3.14	1.13	2.77	0.94
20-29	3.97	1.31	3.80	0.87	3.83	1.08	3.59	0.97
30-39	3.31	1.28	3.51	1.01	3.37	1.11	3.00	0.98
40-49	3.36	1.35	3.60	0.82	3.40	1.25	2.96	0.83
50-59	3.43	0.94	3.50	0.77	3.45	0.83	3.12	0.92
60+	3.68	1.00	3.87	0.77	3.70	0.88	3.60	0.83

Table 22. "Erikson I". Mean ratings, and standard deviations, for Importance, Vividness, Intensity and Rehearsal, by psychosocial stage.

Psychosocial Stage	Importance		Vividness		Intensity		Rehearsal	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Childhood	2.46	1.26	3.38	1.10	3.16	1.04	2.77	0.91
Identity/ Identity Confusion	3.03	1.36	3.30	0.98	3.15	1.11	2.96	0.93
Intimacy/Isolation	4.18	0.90	3.90	0.89	4.04	0.90	3.51	0.94
Generativity/ Stagnation	3.41	1.10	3.62	0.82	3.52	1.14	3.28	0.82
Integrity/ Despair	3.53	1.23	3.71	0.77	3.47	0.87	3.41	0.94

[2] Ratings based on 5-point scale where 1 = lowest level and 5 = highest level

Overall, the mean numbers of memories recalled were associated with fairly moderate levels, (in the low to mid 3's) of importance, vividness, intensity and rehearsal (see Table 20). When the encoding factor ratings are examined across the decades (see Table 21), levels range between the mid 2's to high 3's and, when plotted, display a pattern similar to that found in the lifespan retrieval curve in autobiographical memory (see Figure 26). The lowest mean ratings, for all four encoding factors, were recorded for memories from when subjects were less than 10 years old. These low ratings are probably best explained by age effects. The ratings were subjective and under 10 years old is a long way from over 60. The highest mean ratings are probably more interesting. Across the decades, memories from the decades when subjects were between 20 and 29 years old were rated highest for importance and intensity and only the most recent memories were rated higher for vividness and rehearsal. When examined across psychosocial stages, intimacy vs isolation type coded memories had the highest mean ratings for all four encoding factors and the lowest, with the exception of vividness, were recorded for childhood type memories (see Table 22 and Figure 27). Peaks were revealed in the 20 to 29 year old decades for importance and intensity and in the intimacy vs isolation stage for importance, vividness, intensity and rehearsal (see Table 23). As reported

earlier, these memory types fall in an optimal age range of 20 – 29 years, which is the decade that earlier studies found a reminiscence bump for private events.

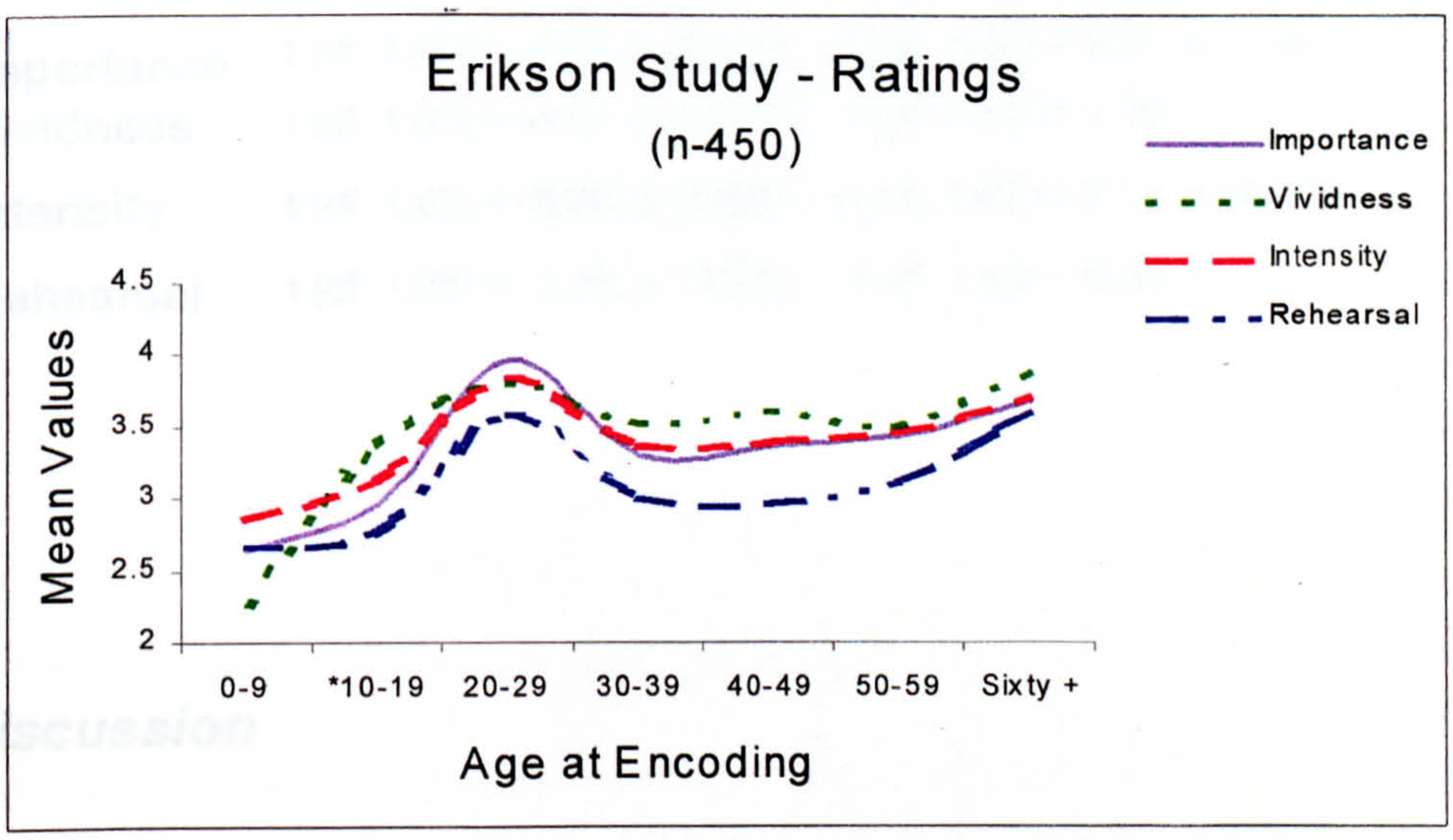

Figure 26. "Erikson 1". Distribution of mean ratings for Importance Vividness, Intensity and Rehearsal, by decade at encoding.

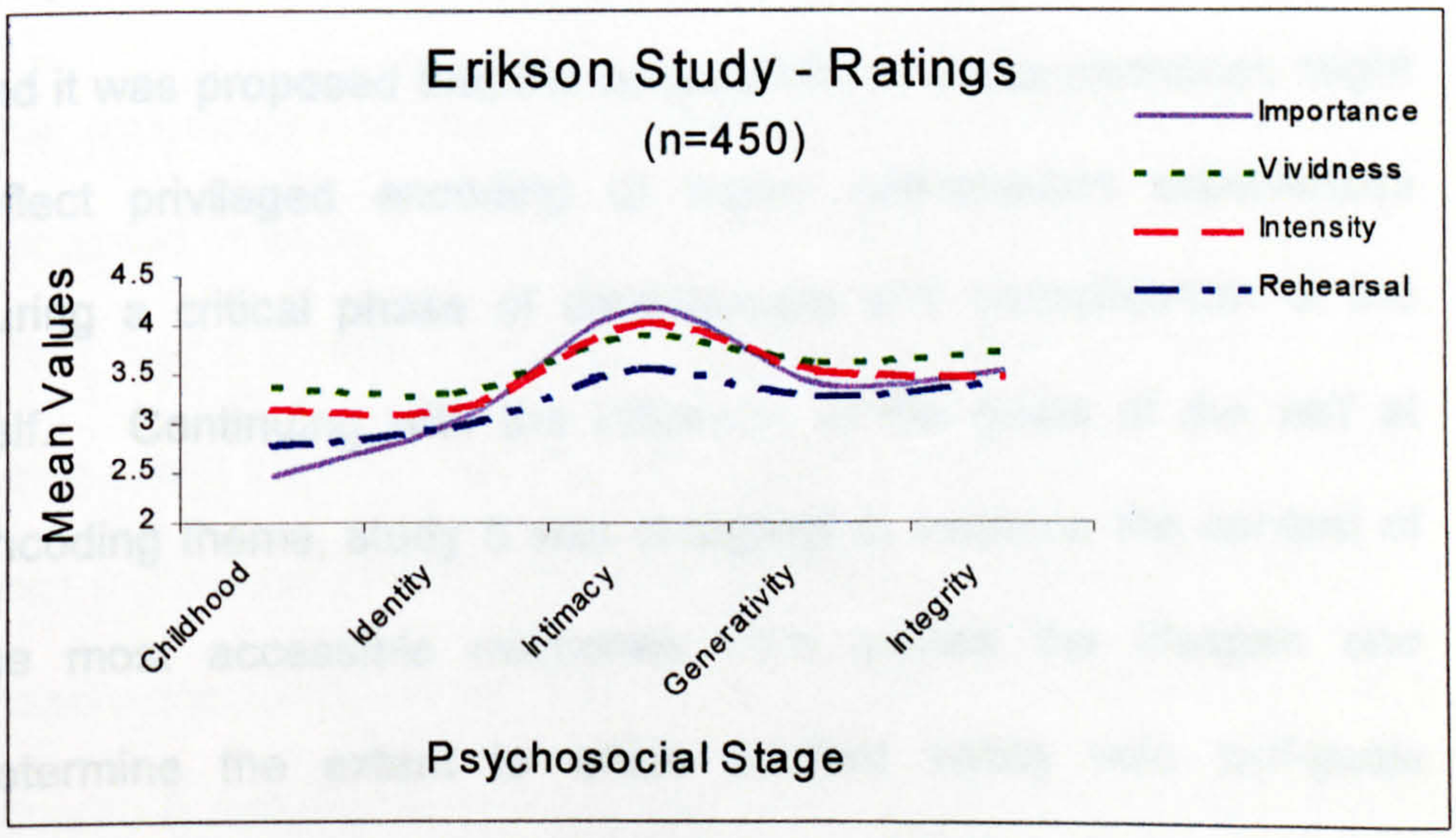

Figure 27. "Erikson 1". Distribution of mean ratings for Importance, Vividness, Intensity and Rehearsal, by psychosocial stage.

Table 23. "Erikson 1". Bonferroni corrected comparisons between Identity and Intimacy and Intimacy and Generativity for Importance, Vividness, Intensity and Rehearsal. (*Significance = p.0.013)*

	Identity vs Intimacy	Intimacy vs Generativity
Importance	t (df. 1,65) = -6.02, p.<0.001	t (df. 1,58) = 3.57, p.<0.001
Vividness	t (df. 1,67) = -4.04, p.<0.001	t (df. 1,60) = 1.10, n.s.
Intensity	t (df. 1,67) = -5.28, p.<0.001	t (df. 1,67) = 2.57, p.<0.013
Rehearsal	t (df. 1,66) = -3.40, p.<0.001	t (df. 1,60) = 0.53, n.s.

Discussion

The earlier studies focused on the content of items recalled from the period of the reminiscence bump (between 10 and 30 years) and it was proposed that the accessibility of these memories might reflect privileged encoding of highly self-relevant experiences during a critical phase of development and consolidation of the self. Continuing with the influence of the goals of the self at encoding theme, study 5 was designed to examine the content of the most accessible memories from across the lifespan and determine the extent to which content varies with self-goals characteristic of different phases of the lifecycle. If one considers the patterns of reminiscence in Figure 25, it appears that, on the whole, the memories recalled did correspond with the psychosocial

stages and the null hypothesis, that the memories recalled would not map onto the Eriksonian psychosocial stages was rejected. There were distinctive peaks in the 2nd and 3rd decades for identity/ID confusion and intimacy/isolation respectively, replicating the findings of earlier studies. Childhood types peaked in the 1st decade, generativity/stagnation was spread across the adult years and integrity/isolation peaked at the end of the lifecycle.

It is therefore proposed that these reminiscence patterns may reflect the goals of the current working self at the time of encoding and offer further support for the theoretical account of memory that proposes that knowledge is represented in terms of goal-relatedness.

The robustness of the reminiscence bump phenomenon was discussed in earlier chapters. It is testament to the power of this effect that the data revealed, despite the same amount of time being spent on each decade, that 35% of the experiences recalled from the period of the reminiscence bump, regardless of whether these were coded or not (Table 17). Given that participants were allowed 5 minutes to recall experiences from each decade, it was perhaps not too unexpected to observe lifespan retrieval curves with a high percentage falling in the first decade (see Table 17 and

Figure 24). However, very few, only 4.2%, were recalled from when the participants were under 5 years old. Another difference in the retrieval curve observed in this study and the others, with the exception of the "Films" condition in study 2, is the slight recency effect. This may also be as a result of the methodology, but recency and the goal-relatedness hypothesis cannot be separated as goal-relatedness provides an explanation for recency. Within the Self-Memory System model, currently active working-self goals would relate to recent experiences more than to remote events, making them more accessible.

The memories recalled were associated with moderate levels of importance (mean 3.29), vividness (mean 3.54), intensity (mean 3.36) and rehearsal (mean 3.10). Interestingly, the highest mean ratings, overall, by decade and by psychosocial stage were for vividness and many research groups have reported moderate to high levels of vividness associated with autobiographical memories (e.g. Brown & Kulik 1977; Brewer 1992; Conway & Bekerian 1988; Conway et al 1994; Rubin & Kozen 1984; Rubin 1995). When examined across both decades and psychosocial stage, an interesting pattern emerged. Ratings for both importance and vividness had significant peaks in the 3rd decade (20 to 29 years) and in the intimacy/isolation stage, which corresponds to this

decade. A possible explanation for this finding may be found within Singer & Salovey's (1993) definition of a self-defining memory which includes vividness and "an important unresolved theme or enduring concern in an individual's life" (p.13). These peaks may, then, reflect a late period of identity and/or the presence of multiple themes, congruent with the 'self' account of autobiographical memory and the epigenetic principle underlying the Erikson's theory of development.

Finally, content analysis was conducted on 450 of the items collected, the remaining 102 (18.5%) miscellaneous items were considered unclassifiable. These tended to contain memory descriptions that could have had multiple classifications. That this should have occurred, although participants had been given specific instructions for the task, again suggests the possibility that they were influenced of multiple themes and also, indirectly, supports the self goal-relatedness hypothesis.

Participants had been asked to record the first memories that came to mind when considering each decade of their life and it was assumed that the first memories to come to mind in this free recall task were the most accessible. (For an example of a completed experimental booklet, see Appendix 11). The finding that the

memories recalled predominately related to the psychosocial crises associated with each decade offers some evidence to suggest that they were encoded in terms of that theme and supports a goal-relatedness hypothesis. However, these findings were so much in accord with the hypothesis that they looked suspiciously favourable and replication was necessary, not least to exclude possible artefacts resulting from the methodology.

It has been proposed that the goals of the self at encoding act as a control process through which autobiographical knowledge is encoded, that highly self-relevant memories benefit from privileged encoding, rendering them highly accessible. If the memories recalled by the participants do reflect this goal-relatedness then it should be possible to achieve similar findings with a different task. The final study, therefore, was designed to re-test the prediction that the most accessible memories would reflect the goals of the current working self at the time of encoding and correspond with the psychosocial crises in Erikson's model. It was also an attempt to refine the methodology.

Experiment 6 *Retrieval of Memories from Across the Lifespan - 'Erikson 2'*

Method

Participants

50 adults, aged between 62 and 90 years (mean 72.4 years), were recruited through advertisements in local newspapers, billboards and a subject pool. There were 21 men, mean age 73.1 years and 29 women, mean age 71.9 years, all of whom were paid £7.50.

Design

A within subjects design was used in which participants recorded the first memory to come to mind, in response to 15 cues, made up of 3 each of the memory type/goals of the psychosocial stages in the earlier study. The cues, and order of presentation, are shown in Appendix 12. Psychosocial stage was, as before, a variable with 5 levels, childhood; identity/identity confusion, intimacy/isolation, generativity/stagnation and integrity/despair. Lifespan period formed a second variable with 7 levels, 0-9 years, 10-19 years, 20-29 years, 30-39 years, 40-49 years, 50-59 years and 60+ years. All memories were dated and the age of the participants at encoding was calculated. As in the earlier study, the first 4 of

Erikson's (1950, 1985) psychosocial stages, (basic trust vs basic mistrust; autonomy vs. shame, doubt; initiative vs guilt; and, industry vs. inferiority) were collapsed into one stage, referred to as childhood. Participants also rated each memory event for importance, vividness, intensity and rehearsal.

Materials and Procedure

After an initial pilot study, participants wrote their responses in an experimental booklet. Each cue was presented on a separate page and every page had the instructions, which asked them to write a brief description of the first memory that came to mind of an event in their lives related to the cue provided. After 3 minutes, the experimenter asked them to stop writing and turn to the next page. To encourage participants to record autobiographical memories, the instructions, again, required that the recorded memory be of an event which had occurred over a period of minutes, hours, but no longer than a day. Also, to include: where they were at the time; what they were doing; who was there, how they felt and anything else that came to mind (see Appendix 13 for an example). On completion of the booklet, participants were asked to record their age at the time of each memory and rate each memory, on a 5-point scale, for importance, vividness, intensity and rehearsal.

Results

All Dated Memories

Table 24. "Erikson 2". Memories recalled from each decade across the lifespan.

Decade	All Memories (n=640)		Less most recent year (n=600)	
	n	%	n	%
0-9 years	76	11.9	76	12.7
10-19 years	111	17.3	111	18.5
20-29 years	105	16.4	105	17.5
30-39 years	58	9.1	58	9.7
40-49 years	50	7.8	50	8.3
50-59 years	63	9.8	63	10.5
60+ years	177	27.7	137	22.8

In total 640 memories were collected (mean 12.8) out of a possible 750. The percentage of memories falling into each of the lifetime periods was calculated, and is shown as the broken line in Figure 32. The lifespan retrieval curve shows marked reminiscence effect, with 33.8% of the memories being drawn from the period when participants were between 10 and 29 years old and a strong recency effect was revealed with 27.7% of the memories from the 60 + period. In order to investigate the content of memories from when subjects were over 60, without the results being confounded by a recency effect, the memories recalled from the most recent year of each subject's life were removed, which excluded 40

memories from further analysis. The remaining 600 memories (mean 12) were plotted and the solid line in Figure 28 represents these data.

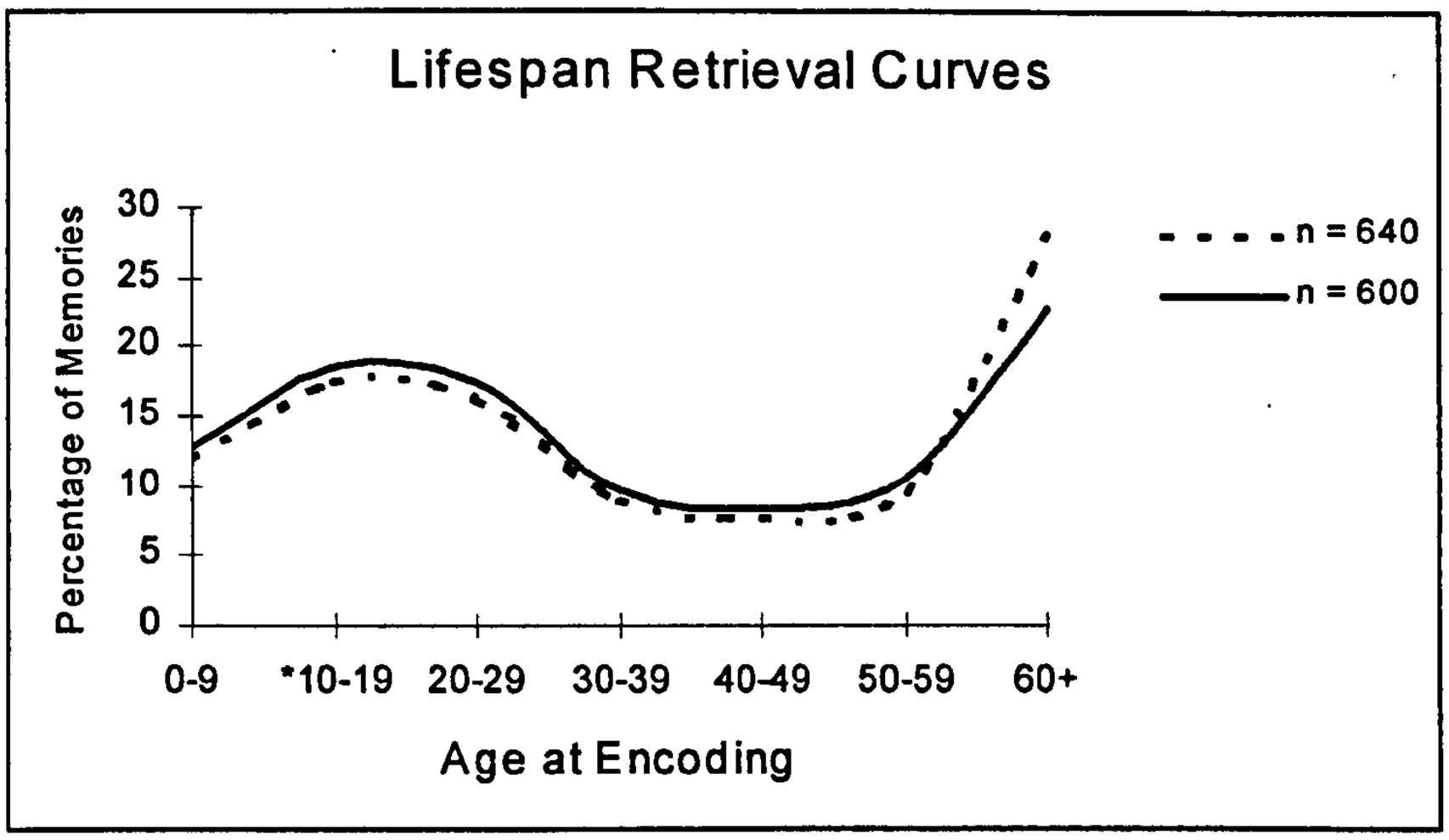

Figure 28. "Erikson 2". Lifespan retrieval curves for all memories and total minus most recent year, by decade at encoding.

Psychosocial Stages

Table 25. "Erikson 2". Mean numbers, and standard deviations, of memories from each psychosocial stage by decade of encoding.

Condition (N=50)	Childhood (n=134)		Identity/ ID Confusion (n=117)		Intimacy/ Isolation (n=108)		Generativity/ Stagnation (n=125)		Integrity/ Despair (n=116)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
0-9 yrs	1.00	1.09	0.24	0.52	0.10	0.36	0.02	0.14	0.16	0.42
10-19 yrs	0.70	0.89	0.66	0.92	0.30	0.51	0.16	0.47	0.40	0.53
20-29 yrs	0.32	0.55	0.32	0.62	0.60	0.73	0.42	0.61	0.44	0.61
30-39 yrs	0.16	0.37	0.20	0.40	0.18	0.39	0.40	0.61	0.22	0.46
40-49 yrs	0.04	0.20	0.18	0.39	0.20	0.40	0.42	0.57	0.16	0.47
50-59 yrs	0.14	0.35	0.22	0.46	0.24	0.43	0.38	0.57	0.28	0.45
60+ yrs	0.32	0.51	0.52	0.76	0.54	0.71	0.70	0.84	0.66	0.69

An 7x5 (lifetime period x stage) ANOVA revealed significant effects for both lifetime period, $F(6,294) = 7.70$, $MSe = 0.55$, $p.<0.001$ and psychosocial stage, $F(4,196) = 4.94$, $MSe = 0.06$, $p.<0.001$ and a significant interaction, $F(24,1176) = 7.00$, $MSe = 0.33$, $p.<0.001$.

As a significant decade x stage interaction was found, Simple Main Effects for Repeated Measures Analyses were computed, to further examine the effect of cue type on decade recalled. Significant effects were found on each decade: 0-9 years, $F(4,1176) = 95.70$, $MSe = 0.33$; 10-19 years $F(4,1176) = 32.7$, $MSe = 0.33$; 20-29 years $F(4,1176) = 8.0$, $MSe = 0.33$; 30-39 years $F(4,1176) = 5.64$, $MSe = 0.33$; 40-49 years $F(4,1176) = 11.52$, $MSe = 0.33$; 50-59 years $F(4,1176) = 4.68$, $MSe = 0.33$; and, 60+ years $F(4,1176) = 13.39$, $MSe = 0.33$, ($p.<0.001$ in all cases).

Memories recalled from each psychosocial stage (cue type) were plotted and are shown in Figure 29. Using the Bonferroni correction method for planned comparisons, contrasts, between decades for each stage, were computed. Reliably more childhood type memories were found to date from the first decade (0 to 9 years), compared to other decades (except for the 2nd decade). Reliably more ID/ID confusion type dated to the 2nd decade (10-19 years) compared with the 1st, 4th, 5th and 6th and reliably more Intimacy/Isolation type memories dated to the 3rd decade (20-29

years), except for the 2nd decade and the most recent memories. For Generativity/Stagnation type memories, no reliable difference was found between the 1st and 2nd decades and there were reliably fewer in the 1st decade compared to all others. With the exception of the 2nd 3rd decades, there were reliably more Integrity/Despair types from the most recent memories, when participants were 60+. (see Table 26).

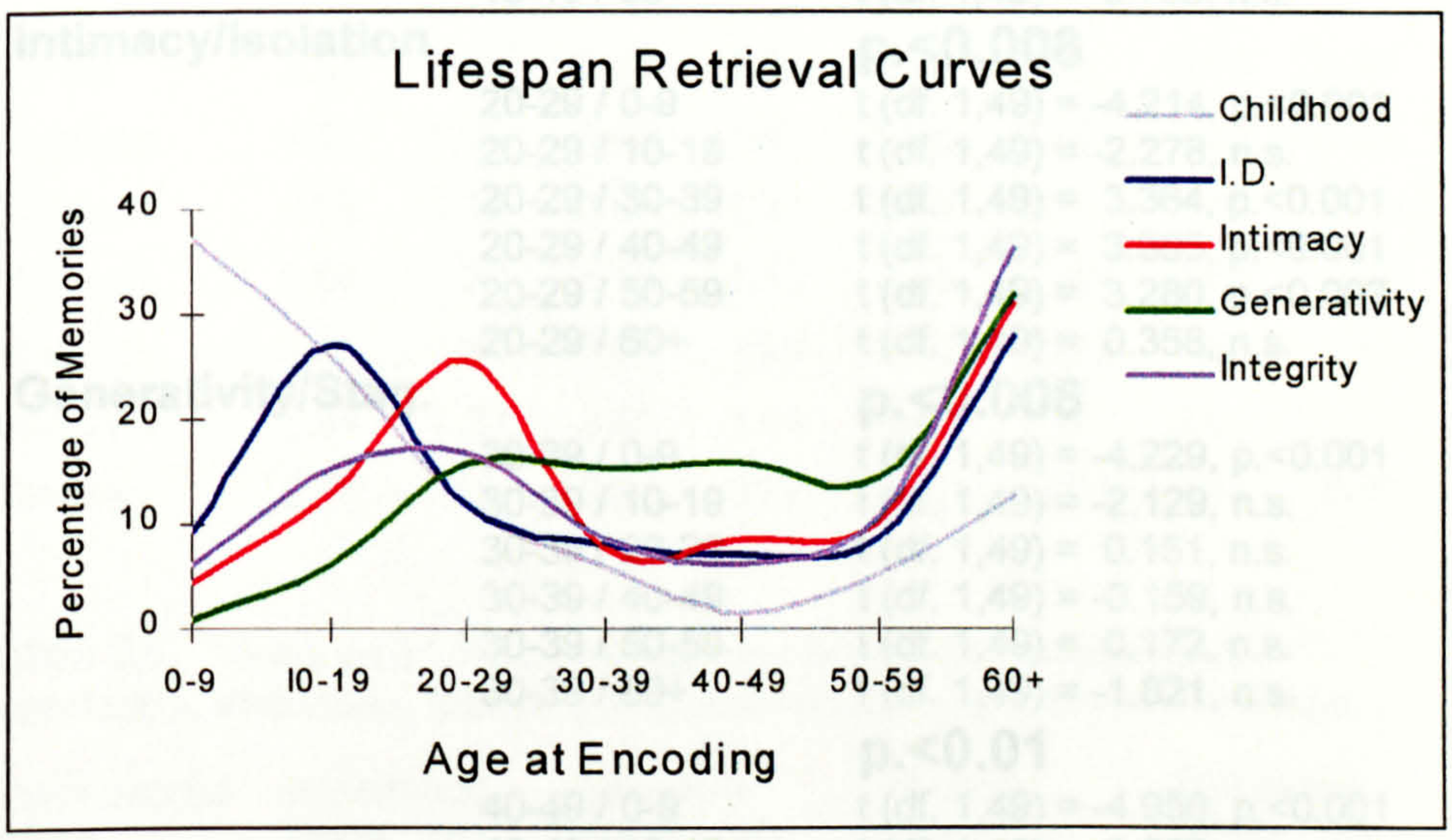

Figure 29. "Erikson 2". Percentage distribution of memories across the lifespan, by psychosocial stage.

Table 26. "Erikson 2". Bonferroni corrected contrasts between decades, for each psychosocial stage.

Psychosocial Stage	Contrast	Significance Level
Childhood		**p.<0.008**
	0-9 / 10-19	t (df. 1,49) = 1.253, n.s.
	0-9 / 20-29	t (df. 1,49) = 3.492, p.<0.001
	0-9 / 30-39	t (df. 1,49) = 4.810, p.<0.001
	0-9 / 40-49	t (df. 1,49) = 6.039, p.<0.001
	0-9 / 50-59	t (df. 1,49) = 5.320, p.<0.001
	0-9 / 60+	t (df. 1,49) = 3.455, p.<0.001
ID/ID Confusion		**p.<0.008**
	10-19 / 0-9	t (df. 1,49) = -2.680, p.<0.01
	10-19 / 20-29	t (df. 1,49) = 1.940, n.s.
	10-19 / 30-39	t (df. 1,49) = 3.145, p.<0.003
	10-19 / 40-49	t (df. 1,49) =. 3.055, p.<0.004
	10-19 / 50-59	t (df. 1,49) = 2.804, p.<0.007
	10-19 / 60+	t (df. 1,49) = 0.756, n.s.
Intimacy/Isolation		**p.<0.008**
	20-29 / 0-9	t (df. 1,49) = -4.214, p.<0.001
	20-29 / 10-19	t (df. 1,49) = -2.278, n.s.
	20-29 / 30-39	t (df. 1,49) = 3.364, p.<0.001
	20-29 / 40-49	t (df. 1,49) = 3.395, p.<0.001
	20-29 / 50-59	t (df. 1,49) = 3.280, p.<0.002
	20-29 / 60+	t (df. 1,49) = 0.358, n.s.
Generativity/Stag.		**p.<0.008**
	30-39 / 0-9	t (df. 1,49) = -4.229, p.<0.001
	30-39 / 10-19	t (df. 1,49) = -2.129, n.s.
	30-39 / 20-29	t (df. 1,49) = 0.151, n.s.
	30-39 / 40-49	t (df. 1,49) = -0.159, n.s.
	30-39 / 50-59	t (df. 1,49) = 0.172, n.s.
	30-39 / 60+	t (df. 1,49) = -1.821, n.s.
		p.<0.01
	40-49 / 0-9	t (df. 1,49) = -4.950, p.<0.001
	40-49 / 10-19	t (df. 1,49) = -2.289, n.s.
	40-49 / 20-29	t (df. 1,49) = 0.001, n.s.
	40-49 / 50-59	t (df. 1,49) = 0.340, n.s.
	40-49 / 60+	t (df. 1,49) = -1.851, n.s.
		p.<0.0125
	50-59 / 0-9	t (df. 1,49) = -4.523, p.<0.001
	50-59 / 10-19	t (df. 1,49) = -1.908, n.s.
	50-59 / 20-29	t (df. 1,49) = 0.292, n.s.
	50-59 / 60+	t (df. 1,49) = -1.997, n.s.
Integrity/Despair		**p.<0.008**
	0-9 / 60+	t (df. 1,49) = -3.989, p.<0.001
	10-19 / 60+	t (df. 1,49) = -2.098, n.s.
	20-29 / 60+	t (df. 1,49) = -1.596, n.s.
	30-39 / 60+	t (df. 1,49) = -3.718, p.<0.001
	40-49 / 60+	t (df. 1,49) = -4.214, p.<0.001
	50-59 / 60+	t (df. 1,49) = -3.060, p.<0.004

Encoding Factors[3]

Table 27. **"Erikson 2". Mean ratings and standard deviations, for Importance, Vividness, Intensity and Rehearsal.**

(n=600)	Mean	SD
Importance	3.52	1.25
Vividness	3.70	1.09
Intensity	3.40	1.17
Rehearsal	2.87	1.10

Table 28. **"Erikson 2". Mean ratings and standard deviations, for Importance, Vividness, Intensity and Rehearsal, by decade of encoding.**

Decade	Importance		Vividness		Intensity		Rehearsal	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
0-9 yrs	3.34	1.23	3.82	1.04	3.48	0.08	2.79	0.97
10-19 yrs	3.35	1.24	3.43	1.07	3.15	1.22	2.52	1.08
20-29 yrs	3.55	1.32	3.66	1.20	3.45	1.25	2.88	1.20
30-39 yrs	3.64	1.36	3.73	1.10	3.43	1.14	2.84	1.18
40-49 yrs	3.55	1.31	3.63	1.29	3.15	1.37	2.85	1.16
50-59 yrs	3.34	1.22	3.65	1.04	3.45	1.17	3.07	1.12
60+ yrs	3.75	1.15	3.88	0.97	3.57	1.02	3.14	0.97

Table 29. **"Erikson 2". Mean ratings and standard deviations, for Importance, Vividness, Intensity and Rehearsal, by psychosocial stage.**

Psychosocial Stage	Importance		Vividness		Intensity		Rehearsal	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Childhood	3.34	1.19	3.53	1.03	3.19	1.09	2.77	1.02
Identity/ID Confusion	3.30	1.20	3.57	0.99	3.16	1.08	2.65	1.02
Intimacy/ Isolation	3.96	1.21	4.16	0.89	3.97	1.09	3.33	1.14
Generativity/ Stagnation	3.60	1.26	3.83	1.16	3.55	1.17	3.09	1.17
Integrity/ Despair	3.44	1.25	3.52	1.14	3.35	1.17	2.76	1.03

[3] Ratings based on 5-point scale where 1 = lowest level and 5 = highest level

Overall, the memories recalled appear to have been associated with reasonably moderate levels, (high 2' to mid-3's) of importance, vividness, intensity and rehearsal (see Table 27). When examined across the decades, levels range between the mid-2's to high 3's (see Table 28 and Figure 30). In all cases, rehearsal scored the lowest mean ratings and, with the exception of the most recent memories, vividness had the highest mean rating in every decade. When plotted across the psychosocial stages, the ratings range between mid 2's to low 4's. Again, rehearsal scored the lowest mean rating in every stage and vividness the highest in all stages. Also, as in the earlier study, ratings attached to intimacy/isolation type memories had the highest mean ratings for all four encoding factors (see Table 29 and Figure 31).

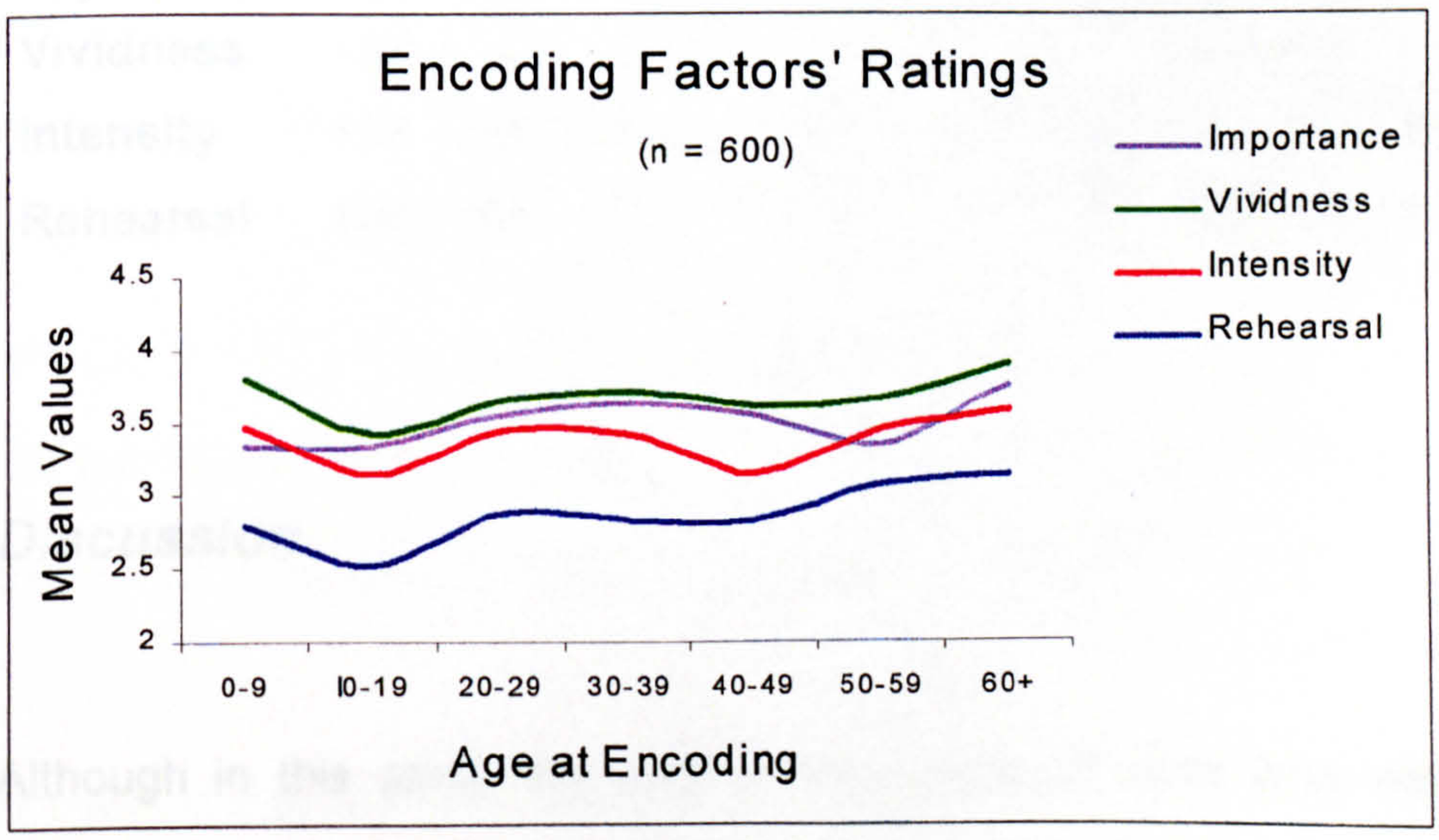

Figure 30. "Erikson 2". Distribution of mean ratings for Importance Vividness, Intensity and Rehearsal, by decade at encoding.

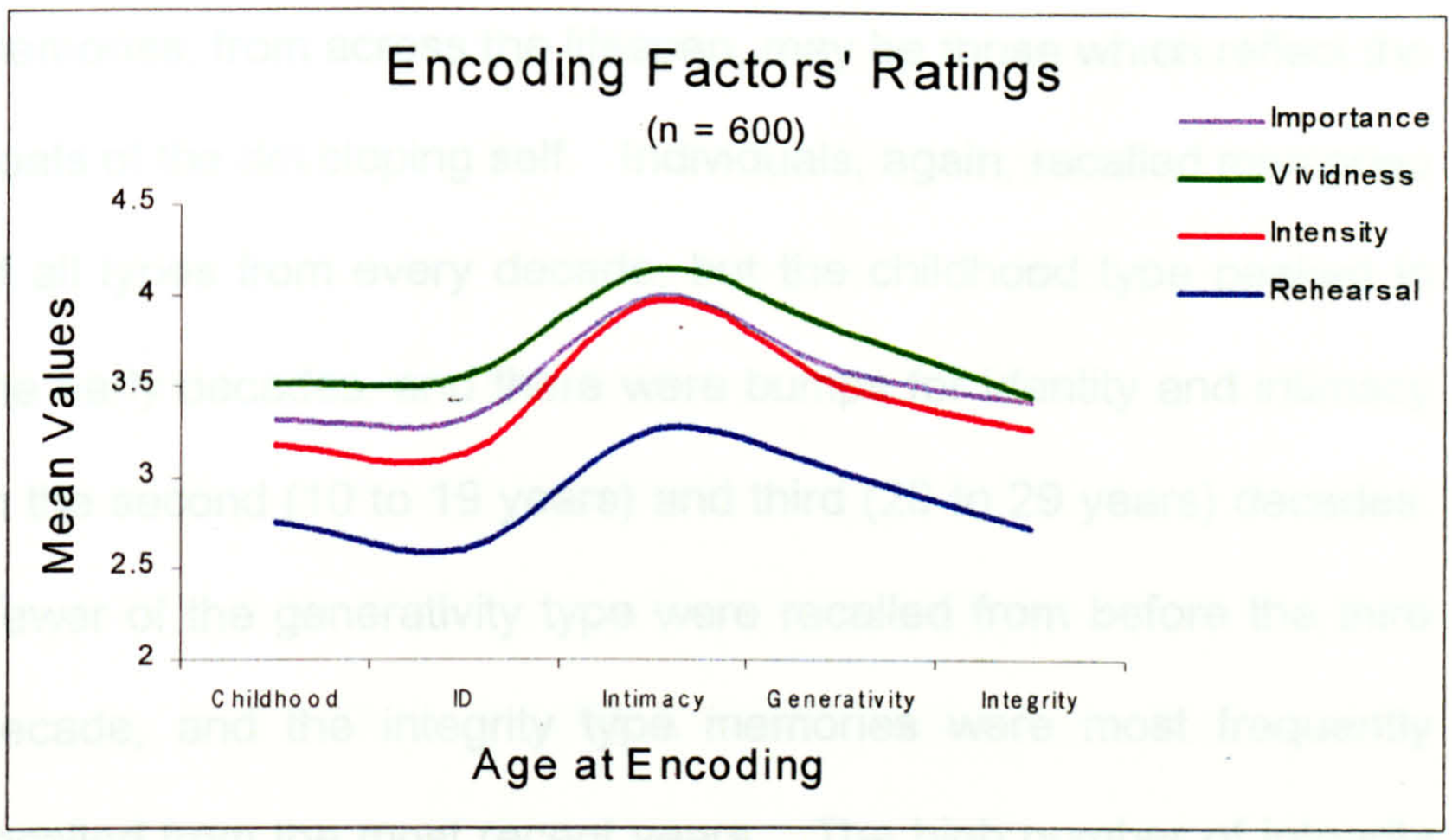

Figure 31. "Erikson 2". Distribution of mean ratings for Importance. Vividness, Intensity and Rehearsal, by psychosocial stage.

Table 30. "Erikson 2". Bonferroni corrected comparisons between Identity and Intimacy and Intimacy and Generativity for Importance, Vividness, Intensity and Rehearsal. ***(Significance = p.<0.013)***

	Identity vs Intimacy	Intimacy vs Generativity
Importance	t (df. 1,107) = -4.49, p.<0.001	t (df. 1,103) = 2.19, n.s.
Vividness	t (df. 1,107) = -5.07, p.<0.001	t (df. 1,107) = 2.48, n.s.
Intensity	t (df. 1,102) = -5.57, p.<0.001	t (df. 1,97) = 3.11, p.<0.002
Rehearsal	t (df. 1,99) = -5.07, p.<0.001	t (df. 1,96) = 2.77, p.<0.007

Discussion

Although in this study the reminiscence patterns were less well defined, compared with those in the 'Erikson 1' study, the results again yielded some evidence to suggest that the most accessible

memories, from across the lifespan, may be those which reflect the goals of the developing self. Individuals, again, recalled memories of all types from every decade, but the childhood type peaked in the early decades, and there were bumps for identity and intimacy in the second (10 to 19 years) and third (20 to 29 years) decades. Fewer of the generativity type were recalled from before the third decade, and the integrity type memories were most frequently recalled from the most recent years. The high number of integrity type memories observed in the second and third decades (Figure 29) was due to a WW2 effect. These subjects were recruited from the Bristol area, which suffered heavy bombing during the Second World War and, as discussed earlier, research has shown such highly self-relevant experiences to be a critical factor in memory accessibility. The items recalled were, again, associated with moderate mean ratings (range 2.87 to 3.70) for importance; vividness; intensity; and rehearsal. The peak observed in the ratings for all of these encoding factors in the Erikson 1 study, for intimacy type memories, was also replicated and this peak may be an indication of how crucial this stage is in development.

These findings are consistent with the data from all of the earlier studies and provide support for the premise that the goals of the working-self mediate encoding and that goal-relevant experience is

organised in such a way that it remains highly accessible (Conway & Pleydell-Pearce, 2000). They are also consistent with other research into the self and the accessibility of autobiographical memories, a phenomenon that is well documented (e.g. Benson et al 1992; Brown & Kulik, 1977; Conway, 1992, 1997; Conway & Pleydell-Pearce, 2000; Fitzgerald, 1988; Neisser, 1986; Singer & Salovey, 1993; Thorne, 1995; Woike, Gershkovich, Piorkowski & Polo, 1999).

However, it could, of course, be argued that these reminiscence patterns only reflect normative life events in a modern western society and not necessarily goal-related experiences (i.e. this is just what happens to people at these ages). That would mean that people simply remember events that are representative of their actual experience at different ages. The Eriksonian view proposes that at any stage, there are experiences that contain mixes of psychosocial themes; experiences that feature predominantly only a single theme but not a theme characteristic of that stage, (e.g. experiences of generativity in adolescence); and, finally, experiences that feature, predominantly, the theme of that stage. The view adopted here, is that it is these latter, stage congruent, experiences that most fully engage the goal system of the working-self and, consequently, are represented in a highly accessible way

and remain highly accessible at a later stage (Conway & Pleydell-Pearce, 2000). This occurs regardless of whether psychosocial stage congruent experiences dominate a stage. The assumption that 'this is just what happens' is questionable as it is unlikely, for example, that the majority of an individual's experiences in early adulthood are concerned solely with intimacy/isolation issues, it's more likely that these themes are relatively infrequent with respect to daily activities. It is true that people do tend to get married when they are in their 20's, but there are also other things going on in their lives. They continue to have important relationships outside of marriage, they work, or are in education, and important public events occur in every decade. The data from both Erikson 1 and 2 revealed that individuals did recall all types of memories at every decade. Therefore, it is proposed that the reason the psychosocial stage related memories are highly accessible because of their association with the goals of the working self, not with the the frequency of experience.

An alternative argument could be that, when individuals are presented with free recall tasks, they might just have schema for each 'age' of life and it is these that determine recall and so lead to these patterns of goal-congruent remembering. Based on their review of the relevant literature, Conway & Pleydell-Pearce (2000)

concluded that it seems possible that people retain broad evaluations of the character of particular periods of their lives; for example, 'I was so happy then', or 'that was a difficult time for me'. It is possible that these sorts of representations could have guided the construction of memories in the 'Erikson 1' study. Such representations would be generated by the working self and be only one source of knowledge that could contribute to raising the accessibility of goal-related memories. However, the 'schema' account doesn't explain the findings of the recall of public events and private events in study 3, or the recall of autobiographical memories associated with public figures in study 1.

It is also proposed that these findings from the two Erikson studies offer some empirical evidence for Erikson's concept of epigenesis. According to his epigenetic principle, age, per se, is not the crucial factor, it's what happens to individuals and the expectations imposed on by them by their society, or culture, that have an overriding influence. Conflicts arise when the environment makes new demands. That is, psychosocial stages are not laid out according to some strict chronological agenda. Also, there is no exact duration for each stage, nor does the individual finish with one and start another. Each contributes to the formation of the whole personality. In his own words "anything that grows has a

ground plan, and ...out of this ground plan the parts arise, each part having its time of special ascendancy until all parts have arisen to form the functioning whole" (Erikson 1968, p.92).

The findings from both study 5 and study 6 are offered as 'big pictures', it has to be conceded that the methodology could benefit from further fine-tuning. One of the reasons for employing the cues used in study 6 was to elicit more integrity vs. despair type memories as in terms of lifecycle, the sample, who had a mean age of 72.4 years, was young. Also, the use of decades as a means of differentiating between psychosocial stages may be a less than perfect procedure, but it did provide a tool with which to investigate these memories. Further research in this vein would also benefit from some refinement of the materials used to generate memories. For example, the cues used in this study utilised what was considered the preoccupations of individuals at each psychosocial stage, whether their coping strategies were adaptive or maladaptive and, perhaps, a measure of psychological well-being might be useful to select a sample who have achieved successful resolution to each consecutive stage.

Finally, although his ideas have been criticised, Erikson's psychosocial theory of development across the lifecycle, with its

focus on the existential problems that face the individual, proved to be a useful framework to help explain the results of the early studies and investigate the content of the final studies. Critics have said that the theory is gender biased in favour of male rather than female development and that, although it claims to be a lifespan theory, more attention is paid to the early stages. However, Erikson is but one of a number of developmental theorists and future research may address other models. Although perhaps flawed, these studies were an attempt to adopt a lifespan approach to the study of autobiographical memory to investigate how the goals of the self influence both encoding and retrieval. In doing so, it has sought to link Erikson's personality theory and current autobiographical memory research.

CHAPTER 6

General Discussion

An overview of the structure and organisation of autobiographical memory was presented in Chapter 1 and some of the evidence for the influence of self-relevance in the encoding and retrieval of memories was reviewed. Although the focus of the thesis broadened from an investigation of the generation identity hypothesis to an examination of memories from across the lifespan, all of the studies presented investigated the influence of the goals of the self. The theoretical approach adopted is that of Conway & Pleydell-Pearce (2000) who propose a Self-Memory System whereby the working self (thought of as a set of currently active goals) and the autobiographical knowledge base combine to form a superordinate memory system. Within this view, the (not necessarily conscious) goals of the self influence the encoding of new experience and knowledge is both represented and accessed in terms of goal-relatedness. All of the studies required participants to report the first items to come to mind in response to various cues, and, in each case, the assumption was that these would be their most accessible memories. It was reasoned that

the most accessible memories from across the lifespan would be those that had once been highly goal-related and had had the benefit of being encoded in a way which would cause them to retain good accessibility, i.e. some sort of preferential encoding.

The studies conducted have looked at the content of memories from specific periods of the lifespan, employing adults whose ages ranged from 30 to 70 years old, as well as the content of memories from across the lifespan in older adults up to the age of 90 years. In each case, to a greater or lesser degree, the data have provided support for the goal-relatedness hypothesis (Conway & Pleydell-Pearce, 2000). The findings from the first three studies, Ambiguous Names, Songs and/or Pieces of Music and Public and Private Events, suggest some support for a period of formation of generation identity (Conway, 1997b; Fitzgerald, 1988, Mannheim, 1928/1952; Schuman et al, 1989, 1992, 1994, 1997) during adolescence/early adulthood. Mannheim stressed the social construction of generations and Conway (1997b) proposed that members of a generation share common goals, imposed on them by the social forces they face, which would result in generational differences in the types of knowledge being emphasised within a generation unit. In these studies, all age groups showed an increased frequency in recall for public events and memories

associated with public figures for the period between 10 and 19 years old. From the results, it appeared that newsworthy incidents, characters and other cultural events are more memorable if they were experienced during this period. Consider the news of JFK's assassination in 1963: This was an event experienced by all but the youngest participants in the Public and Private Events' study. However, when the first Public Event items recalled were examined, it was reported most frequently by the 40 to 49 years old group. The age at the time of the event of participants who recalled this event ranged from 10 to 15 years. In fact, this was the only group where the dominant event type recalled was "Murder/Assassination" and the mean age for such events was 15.03 years. The JFK assassination also proved to be one of the indicators of generational differences in the Ambiguous Names study, where, in response to the cue "Oswald", participants under 50 years old were more likely to respond with "Lee Harvey Oswald", the man accused of the murder. The oldest group (aged between 60 to 70 years) were more likely to respond with "Oswald Moseley", the infamous fascist prominent during the 1930's.

The results have revealed that this period of the formation of generation identity, during adolescence/early adulthood, corresponds, roughly, with the period of identity formation identified

by Erikson (1950). From these findings, it has been proposed that one of the goals at this important psychosocial stage may be the formation of an external, or generational identity with their society. Perhaps the most interesting finding from these studies was the appearance of the second bump, which suggests that there may be two major components in the reminiscence bump. Memories of a more personal nature tended to be recalled most frequently from when participants were between 20 and 29 years old, which, again, corresponds to an Eriksonian psychosocial stage, that of intimacy. Recall of these more intimate memories may also reflect a late period of identity formation, achieved by sharing close relationships. Content analysis of the types of events recalled from this period revealed that they do appear to reflect the goal of achieving intimacy. This finding was supported in the Novelty study, where a large reminiscence peak was observed for recall of items from the period when participants were between 20 to 29 years old. Content analysis of these items revealed that 71% of these concerned mentions of relationship events. This study also offered some support for the Rubin et al (1998) novelty account of the reminiscence bump. Although there is an increased frequency in the recall of items from the 20 to 29 period, these participants were reporting novel items in a booklet entitled "Novel events in your private life" which may have confounded the results.

It has been proposed that the increased frequency in recall of items from when rememberers would have been between 10 and 29 years old is a product of privileged encoding of experiences highly relevant to an individual during a critical phase of development and consolidation of the self.

The theoretical approach adopted in this thesis stresses the central role of the goals of the current self in both the encoding and retrieval of memories. From this view, knowledge is both represented and accessed in terms of goal-relatedness and the most accessible knowledge is that most strongly related to current goals. However, over time, goals change and what was once highly self-relevant becomes less so and the type of experience to benefit from this privileged encoding will differ. However, improved accessibility may be preserved, providing it doesn't interfere with current working-self goals. The World War II effect observed for the oldest participants in the Public and Private Events study offers some support for this from within the thesis. The result of this then is two types of highly accessible goal-related knowledge that can be used in the construction of specific memories. The first of the "Erikson" studies investigated the accessibility goal-relatedness hypothesis by scrutinising the

patterns and content of autobiographical memories recalled from across the lifespan. The findings from this study supported the prediction that the most accessible memories from different lifetime periods would reflect the goals of the current self at the time of encoding and would correspond to the Eriksonian psychosocial stages. The two bumps observed in the Public and Private Events study were replicated and this provided further and strong support for the proposition that the two important themes of identity and intimacy underlie the reminiscence bump. The final study, Erikson 2, attempted to refine the methodology and to be a more direct test of the hypothesis and the findings of Erikson 1 were replicated. Interestingly, the results from both of these studies support not only the accessibility/goal relatedness hypothesis, but also Erikson's theory of the changing focus of the self of the lifespan and his notion of epigenesis. As discussed in Chapter 5, they are also consistent with the findings of other research into the self and the accessibility of autobiographical memories.

Conclusion

From the empirical evidence reported it is proposed that the goals of the 'self' influence encoding and that such self-relevant experiences benefit from some type of privileged encoding. The data presented has yielded some evidence to suggest that the reminiscence bump consists of two components and that, even though memories of all types are recalled at every lifetime period, the most accessible may be those most relevant to the goals of the developing self. Not only in those most frequently recalled, as in the bump, but also across the lifespan.

This research is offered as empirical evidence which supports the theoretical view that the most accessible memories from across the lifespan are those which appear to be an indirect record of previous goal-states of the self (Conway & Pleydell-Pearce, 2000). The reminiscence patterns observed appear to correspond with the developmental tasks (Erikson 1985) dominant at the time of encoding, particularly during the period of the reminiscence bump (between 10 and 29 years old), and suggest that goal-relevant experiences are encoded in such a way as to make them highly accessible. The influence of current goals has also been

suggested in reminiscence patterns where recency effects were observed (Studies: 2, 5 and 6).

The data from all of the reported studies yielded reminiscence peaks and content analyses of the recalled items revealed two distinct components within the reminiscence bump and it was proposed that this reflected privileged retention of knowledge from important stages in the development of the self.

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Appendices

Ambiguous Names Study
Responses to Ambiguous Cues

Appendix 1

CHARLES	Prince Charles	1 (2)
	Charles Dance	21 (3)
	Ray Charles	46 (5)
	John Charles	88 (4)
	Charles Boyer	56 (3)
	Bonnie Prince Charlie	137 (2)
	Charles Aznavor	183 (5)
	Charles Stewart Parnell	199 (1)
	Charles de Gaulle	229 (1)
	Craig Charles	268 (3)
	Charles Darwin	273 (8)
	Lord Charles 'Crackerjack'	292 (7)
	Charles I	295 (2)
	Charles Manson	319 (8)
STEWART	Rod Stewart	2 (5)
	Jackie Stewart	22 (4)
	Dave Stewart	47 (5)
	Stewart Granger	89 (3)
	Andy Stewart	112 (5)
	James Stewart	126 (8) (48 (3))
	Tom Stewart	154 (10)
	Dr. Stewart	215 (10)
	Alec Stewart	221 (4)
	Moira Stewart	246 (7)
	Alistair Stewart	269 (7)
	Michael Stewart	281 (1)
	Spencer Stewart	310 (3)
	Ed Stewart	332 (7)
JAMES	James Callaghan	3 (1)
	James Dean	10 (3)
	James Hearn	343 (10)
	James Coburn	23 (3)
	Alex James	33
	James Stewart	48 (3)
	James Baldwin	58 (6)
	Henry James	73 (6)
	Keith James	90 (10)
	James Joyce	99 (6)
	Syd James	101 (3)
	Jesse James	113 (8)

JAMES cont'd	Bethan James	117 (8)
	James Mason	119 (3)
	James Bond	130 (7)
	Harry James	162 (5)
	James Brown	176 (5)
	James Galway	146 (5)
	James Hunt	155 (4)
	James Taylor	212 (5)
	James Herbert	217 (6)
	James Wattana	236 (4)
	Clive James	248 (7)
	P.D. James	255 (6)
	Sally James	275 (7)
	John James	277 (8)
	James Fox	285 (3)
	James McDaid	280 (1)
	King James	296 (2)
	James the Engine	305 (7)
	Geraldine James	336(3)
	James Michener	328 (6)
GRAHAM	Graham Greene	4 (6)
	Graham Souness	24 (4)
	George Graham	34 (4)
	Graham Taylor	49 (4)
	Billy Graham	59 (9)
	Katherine Graham	74 (1)
	Sir Alexander Graham	91 (1)
	Graham Hill	114 (4)
	Graham Kendrick	120 (7)
	Graham Nash	131 (5)
	Kenneth Graham	138 (6)
	Martha Graham	141 (7)
	Graham Gooch	184 (4)
	Alexander Graham Bell	189 (8)
	Heroe Graham	196 (4)
	Graham Miller	165 (7)
	Graham Lambden	225 (10)
	Gloria Graham	232 (3)
	Winston Graham	256 (6)
	Graham Gardner	293 (7)
	Graham Steward	297 (4)
	Graham Smith	306 (10)
	Jackie Graham	333 (5)
	Graham Garden	339 (7)
	Graham Crackers	341 (8)

MONTGOMERY	Montgomery Clift	5 (3)
	A.L. Montgomery	60 (6)
	Elizabeth Montgomery	75 (3)
	Fld.M. Montgomery	84 (1)
	Marion Montgomery	132 (5)
	Colin Montgomery	35 (4)
	Malcolm Montgomery	192 (7)
	Susan Montgomery	147 (10)
	Montgomery Mouse	251 (7)
GEORGE	Boy George	6 (5)
	Eddie George	25 (8)
	George Mitchell	36 (1)
	George Michael	50 (5)
	George IV	61 (2)
	Lloyd George	76 (1)
	Susan George	85 (3)
	George Best	115 (4)
	George Hamilton	121 (3)
	George Orwell	125 (6)
	George Harrison	28 (5)
	George V	142 (2) (7)
	George Bernard Shaw	166 (6)
	Charlie George	170 (4)
	George Washington	172 (1)
	George Bush	159 (1)
	George Dunn	218 (10)
	George Melley	233 (5)
	Bobby George	237 (4)
	George Martin	264 (5)
	George Segal	270 (3)
	Saint George	278 (9)
	Melissa George	307 (3)
	George III	345 (2)
	King George I n/c	312 (8)
	George Burns	334 (7)
	George Clooney	329 (3)
	George Benson	314 (5)
RUTH	Ruth Rendell	7(6)
	Ruth Littlejohn	51 (10)
	Ruth Cohen	62 (10)
	Ruth Gordon	77 (6)
	Babe Ruth	92 (4)
	Ruth 'Pan's People'	133 (7)
	Ruth Ellis	171 (8)
	Ruth Roman	185 (3)

HOWARD cont'd.	Audrey Howard	249 (6)
	Howard the Duck	308 (7)
	Howard Protarch	338 (4)
	Howard Devoto	335 (5)
DEAN	James Dean	10 (3)
	Dean Martin	27 (3)(5)
	Brenda Dean	65 (1)
	Dean Stockwell	123 (3)
	Dean Saunders	129 (4)
	Torville & Dean	157 (7)
	Dixie Dean	160 (4)
	Dean Richards	178 (4)
	Letitia Dean	190 (3)
	Dean Swift	207 (6)
	Forest of Dean	213 (8)
	Dean Acheson	252 (1)
	Dean Thomson	322 (10)
HARRISON	Harrison Ford	11 (3)
	George Harrison	28 (5)
	Rex Harrison	79 (3)
	Brian Harrison	94 (10)
	Noel Harrison	116 (3)
	John Harrison	127 (8)
	Harrison (organ maker)	283 (8)
	Tony Harrison	287 (6)
HOLLY	Buddy Holly	12 (5)
	Holly de Jong	29 (3)
	Holly Hunter	39 (3)
	Holly Forsyte	66 (7)
	Holly Aird	103 (3)
	Holly Go Lightly	143 (3)
	Xmas Holly	216 (9)
	Holly Johnson	223 (5)
	Holly Dog - Blue Peter	250 (7)
	Holly - Red Dwarf	253 (7)
RICHARD	Richard Nixon	13 (1)
	Little Richard	30 (5)
	Richard Burton	40 (3)
	Richard III	67 (8)
	Cliff Richard	80 (3) (5)
	Richard Briars	100 (3)
	Richard Chamberlain	104 (3)
	Richard II	127 (7)

RICHARD cont'd.	Richard 'C'	135 (10)
	Richard Avedon	139 (7)
	Richard Branson	168 (8)
	Richard Madeley	179 (7)
	Richard Harris	181 (3)
	Richard Fox	186 (4)
	Keith Richards	194 (5)
	Richard I	163 (8)
	Richard Dimbleby	220 (7)
	Richard Wyatt	230 (7)
	Richard Greene	234 (3)
	Richard Widmark	240 (3)
	Richard Wilson	254 (3)
	Richard Baker	265 (7)
	Richard Strauss	266 (5)
	Richard Rogers	288 (8)
	Richard Kimble	290 (7)
	Richard Ingrams	308 (7)
	Viv Richards	309 (4)
	Richard Gere	311 (3)
	Richard Dawkins	317 (8)
	Richard Vranch	340 (5)
THOMAS	Terry Thomas	14 (3)
	Michael Thomas	41 (4)
	Thomas More	68 (1)
	Dylan Thomas	71 (6)
	Thomas the T.E.	95 (7)
	Lord Tony Pandy	124 (1)
	Thomas a Beckett	145 (9)
	Thomas Mann	149 (6)
	Thomas Hardy	153 (6)
	Ron Thomas	169 (1)
	Gareth Thomas	198 (3)
	Kristen Scott Thomas	202 (3)
	Leslie Thomas	187 (6)
	Geoff Thomas	224 (4)
	Thomas - The Cat	227 (7)
	Clive Thomas	239 (4)
	Thomas Beeching	241 (1)
	Thomas Muster	243 (4)
	Thomas Aquinas	259 (8)
	Thomas Jefferson	262 (1)
	Edward Thomas	289 (6)
	Thomas More	298(8)
	Thomas Hughes	313 (6)
	Thomas Williams	323 (10)

THOMAS cont'd.	Ewan Thomas	326 (4)
	Judge Thomas	330 (8)
JOSEPH	Keith Joseph	15 (1)
	Joseph Rowntree	69 (8)
	Joseph Heller	81 (6)
	Lesley Joseph	86 (3)
	Christ's Father	96 (9)
	J. Old Testament	105 (9)
	Joseph Cotton	109 (3)
	Peter Joseph	140 (1)
	Joseph Campbell	150 (6)
	Joseph Conrad	152 (6)
	Joseph Lock	174 (5)
	"Joseph"	191 (9)
	Joseph Stalin	201 (1)
	Joseph Sutton	214 (10)
	Joseph Mengella	235 (8)
	Franz Josef Strauss	263 (5)
	Joseph Kennedy	274 (1)
	John Blake	276 (4)
	Michael Joseph	282 (1)
	Franz Joseph Hapsburg	300 (1)
	Joseph Priestley	318 (8)
	Joseph Day	324 (10)
BLAKE	George Blake	16 (1)
	Nathan Blake	42 (4)
	Morrison Blake	53 (6)
	William Blake	70 (6)
	Blake Edwards	106 (7)
	Blake Carrington	110 (7)
	Blake 7	118 (7)
	Sexton Blake	144 (7)
	Chris Blake	180 (4)
	Admiral Blake	208 (8)
	Quentin Blake	260 (6)
	Henry Blake	279 (7)
	Blake Morrison	303 (5)
	Nicholas Blake	337 (6)
OSWALD	Lee Harvey Oswald	17 (1)
	Oswald Mosley	43 (1)
	Oswald Bailey	195 (8)

DYLAN	Bob Dylan	18 (5)
	Dylan Thomas	71 (6)
	Dylan - Magic Roundabout	209 (7)
SCOTT	Scott Joplin	19 (5)
	Janette Scott	31 (3)
	F. Scott Fitzgerald	44 (6)
	Scott MacKenzie	54 (5)
	Scott /Antartic	72 (8)
	Sir Walter Scott	82 (6)
	Scott Gibbs	97 (4)
	Scott Walker	107 (5)
	Norman Scott	111 (1)
	Terry Scott	182 (3)
	George C. Scott	203 (3)
	Salina Scott	161 (7)
	Peter Scott	164 (8)
	Scott - Thunderbirds	158 (7)
	Ronnie Scott	244 (5)
	Scott Ridley	291 (3)
	Randolph Scott	299 (3)
	Mr. Scott - 'Startreck'	301 (7)
	Scott – Neighbours	310 (7)
DUNCAN	Duncan Goodhew	20 (4)
	Peter Duncan	32 (4) (7) (1)
	Duncan Edwards	45 (4)
	Duncan Campbell	55 (7)
	Lindsay Duncan	83 (3)
	Isadora Duncan	87 (7)
	Mike Duncan	98 (10
	PJ & Duncan	136 (5)
	Duncan Warren	151 (7)
	Duncan Sandis	148 (1)
	Duncan MacKenzie	175 (7)
	King Duncan	188 (8)
	Trevor Duncan	211 (5)
	Duncan Mason	228 (10)
	John Duncan	245 (4)
	Duncan Macrae	284 (3)
	Lord Duncan	302 (8)
	Duncan Browne	304 (5)
	Duncan Forbes	325 (10)
	Chris Duncan	327 (7)
	Duncan Mayhew	342 (1)

Ambiguous Names Study
Distribution of Responses to Ambiguous Names, by Age Group
(n = 1690)

Appendix 2

CUE	AGE GROUP 30-39 YEARS OLD (N=25)	AGE GROUP 40-49 YEARS OLD (N=25)	AGE GROUP 50-59 YEARS OLD (N=25)	AGE GROUP 60-70 YEARS OLD (N=25)
CHARLES	Prince Charles (68.0%) Craig Charles (8.0%) Others (16.0%) Missing (8.0%)	Prince Charles (56.0%) Ray Charles (12.0%) Charles de Gaulle (8.0%) Others (16.0%) Missing (8.0%)	Prince Charles (56.0%) Ray Charles (12.0%) Others (16.0%) Missing (16.0%)	Prince Charles (64.0%) Ray Charles (12.0%) Charles de Gaulle (8.0%) Charles Boyer (8.0%) Others (8.0%)
STEWART	Rod Stewart (32.0%) Jackie Stewart (20.0%) James Stewart (16.0%) Others (16.0%) Missing (16.0%)	Rod Stewart (36.0%) Jackie Stewart (24.0%) James Stewart (16.0%) Others (12.0%) Missing (12.0%)	Rod Stewart (24.0%) Jackie Stewart (20.0%) Stewart Grainger (20.0%) Others (24.0%) Missing (12.0%)	James Stewart (44.0%) Stewart Grainger (16.0%) Others (28.0%) Missing (12.0%)
JAMES	James Stewart (16.0%) James Dean (12.0%) Others (60.0%) Missing (12.0%)	James Stewart (20.0%) James Joyce (8.0%) Clive James (8.0%) Others (48.0%) Missing (16.0%)	James Stewart (16.0%) James Mason (12.0%) Jesse James (8.0%) Henry James (8.0%) Others (36.0%) Missing (20.0%)	Syd James (12.0%) James Hunt (12.0%) Henry James (12.0%) Others (56.0%) Missing (8.0%)

Appendix 2 cont'd.

CUE	AGE GROUP 30-39 YEARS OLD (N=25)	AGE GROUP 40-49 YEARS OLD (N=25)	AGE GROUP 50-59 YEARS OLD (N=25)	AGE GROUP 60-70 YEARS OLD (N=25)
GRAHAM	Graham Green (24.0%) Billy Graham (12.0%) Graham Hill (12.0%) Others (40.0%) Missing (12.0%)	Billy Graham (28.0%) Graham Greene (16.0%) Others (48.0%) Missing (8.0%)	Graham Gooch (16.0%) Graham Green (12.0%) Others (64.0%) Missing (8.0%)	Billy Graham (32.0%) Others (56.0%) Missing (12.0%)
MONTGOMERY	Fld. M. Montgomery (28.0%) Montgomery Clift (24.0%) Colin Montgomery (12.0%) Missing (36.0%)	Fld. M. Montgomery (28.0%) Montgomery Clift (24.0%) Elizabeth Montgomery (8.0%) Others (8.0%) Missing (32.0%)	Fld. M. Montgomery (48.0%) Montgomery Clift (36.0%) Missing (16.0%)	Fld. M. Montgomery (56.0%) Montgomery Clift (24.0%) Elizabeth Montgomery (8.0%) Others (12.0%)
GEORGE	George Best (12.0%) Boy George (12.0%) George Michael (8.0%) Others (60.0%) Missing (8.0%)	George Best (28.0%) Boy George (20.0%) George Michael (12.0%) Others (40.0%)	Boy George (20.0%) George Harrison (16.0%) Eddie George (12.0%) George Best (12.0%) Others (24.0%) Missing (16.0%)	Boy George (32.0%) George Harrison (12.0%) Others (32.0%) Missing (24.0%)
RUTH	Ruth Rendell (40.0%) Babe Ruth (16.0%) Others (16.0%) Missing (28.0%)	Ruth Rendell (48.0%) Babe Ruth (12.0%) Others (8.0%) Missing (32.0%)	Ruth Rendell (40.0%) Babe Ruth (16.0%) Others (28.0%) Missing (16.0%)	Babe Ruth (36.0%) Ruth Rendell (20.0%) - Old Testament (12.0%) Other (24.0%) Missing (8.0%)

Appendix 2 cont'd

CUE	AGE GROUP 30-39 YEARS OLD (N=25)	AGE GROUP 40-49 YEARS OLD (N=25)	AGE GROUP 50-59 YEARS OLD (N=25)	AGE GROUP 60-70 YEARS OLD (N=25)
NEVILLE	Neville Chamberlain (16.0%) Aaron Neville (12.0%) Others (24.0%) Missing (48.0%)	Neville Chamberlain (52.0%) Neville Shute (8.0%) Others (12.0%) Missing (28.0%)	Neville Chamberlain (36.0%) John Neville (16.0%) Gary Neville (8.0%) Others (16.0%) Missing (24.0%)	Neville Chamberlain (60.0%) Neville Shute (16.0%) John Neville (8.0%) Others (16.0%)
HOWARD	Michael Howard (20.0%) Frankie Howard (12.0%) Others (52.0%) Missing (16.0%)	Michael Howard (32.0%) Frankie Howard (20.0%) Trevor Howard (16.0%) Others (24.0%) Missing (28.0%)	Michael Howard (16.0%) Katherine Howard (16.0%) Howard Hughes (16.0%) Others (4.0%) Missing (16.0%)	Trevor Howard (28.0%) Howard Keel (20.0%) Michael Howard (20.0%) Other (20.0%) Missing (12.0%)
DEAN	James Dean (56.0%) Dean Stockwell (8.0%) Dean Martin (8.0%) Others (12.0%) Missing (16.0%)	James Dean (36.0%) Dean Martin (20.0%) Others (24.0%) Missing (20.0%)	James Dean (68.0%) Dean Martin (12.0%) Others (4.0%) Missing (16.0%)	James Dean (44.0%) Dean Martin (32.0%) Dixie Dean (8.0%) Others (12.0%) Missing (4.0%)
HARRISON	Harrison Ford (76.0%) Others (12.0%) Missing (12.0%)	George Harrison (48.0%) Harrison Ford (36.0%) Others (16.0%)	Harrison Ford (44.0%) George Harrison (36.0%) Rex Harrison (12.0%) Missing (8.0%)	Harrison Ford (44.0%) Rex Harrison (28.0%) George Harrison (20.0%) Other (4.0%) Missing (4.0%)

Appendix 2 cont'd.

CUE	AGE GROUP 30-39 YEARS OLD (N=25)	AGE GROUP 40-49 YEARS OLD (N=25)	AGE GROUP 50-59 YEARS OLD (N=25)	AGE GROUP 60-70 YEARS OLD (N=25)
RICHARD	Richard Madeley (12.0%) Cliff Richard (12/0%) Others (56.0%) Missing (20.0%)	Cliff Richard (24.0%) Richard III (20.0%) Others (44.0%) Missing (12.0%)	Cliff Richard (24.0%) Richard III (16.0%) Little Richard (12.0%) Others (44.0%) Missing (4.0%)	Cliff Richard (24.0%) Richard III (16.0%) Little Richard (12.0%) Others (44.0%) Missing (4.0%)
HOLLY	Buddy Holly (28.0%) Holly Hunter (24.0%) Others (16.0%) Missing (32.0%)	Buddy Holly (52.0%) Holly Hunter (20.0%) Others (12.0%) Missing (16.0%)	Buddy Holly (44.0%) Others (32.0%) Missing (24.0%)	Buddy Holly (64.0%) Others (20.0%) Missing (16.0%)
THOMAS	- the Tank Engine (24.0%) Dylan Thomas (16.0%) Others (40.0%) Missing (20.0%)	- the Tank Engine (24.0%) Dylan Thomas (24.0%) Terry Thomas (16.0%) Others (28.0%) Missing (8.0%)	Terry Thomas (28.0%) Dylan Thomas (24.0%) - the Tank Engine (16.0%) Others (28%.0%) Missing (4.0%)	Thomas Hardy (20.0%) Dylan Thomas (16.0%) Terry Thomas (12.0%) - the Tank Engine (12.0%) Others (28.0%) Missing (12.0%)
JOSEPH	Lesley Joseph (20.0%) - of Nazareth (12.0%) Others (36.0%) Missing (32.0%)	Keith Joseph (28.0%) Joseph Cotton (12.0%) Others (44.0%) Missing (16.0%)	Keith Joseph (24.0%) - Old Testament (12.0%) - of Nazareth (12.0%) Others (36.0%) Missing (16.0%	Keith Joseph (24.0%) Joseph Cotton (16.0%) Joseph Conrad (12.0%) Others (36.0%) Missing (12.0%)

Appendix 2 cont'd.

CUE	AGE GROUP 30-39 YEARS OLD (N=25)	AGE GROUP 40-49 YEARS OLD (N=25)	AGE GROUP 50-59 YEARS OLD (N=25)	AGE GROUP 60-70 YEARS OLD (N=25)
BLAKE	Blake Edwards (24.0%) William Blake (16.0%) Others (16.0%) Missing (44.0%)	William Blake (28.0%) Blake 7 (12.0%) George Blake (12.0%) Others (28.0%) Missing (20.0%)	William Blake (28.0%) George Blake (20.0%) Sexton Blake (12.0%) Others (20.0%) Missing (20.0%)	Sexton Blake (28.0%) William Blake (16.0%) Others (32.0%) Missing (24%)
OSWALD	Lee Harvey Oswald (48.0%) Oswald Moseley (16.0%) Missing (36.0%)	Lee Harvey (64.0%) Oswald Moseley (28.0%) Missing (8.0%)	Lee Harvey Oswald (40.0%) Oswald Moseley (40.0%) Other (4.0%) Missing (16.0%)	Oswald Moseley (76.0%) Lee Harvey Oswald (16.0%) Others (8.0%)
DYLAN	Bob Dylan (60.0%) Dylan Thomas (16.0%) Missing (24.0%)	Bob Dylan (76.0%) Dylan Thomas (20.0%) Missing (4.0%)	Bob Dylan (64.0%) Dylan Thomas (28.0%) Missing (8.0%)	Dylan Thomas (68.0%) Bob Dylan (24.0%) Other (4.0%) Missing (4.0%)
SCOTT	- of the Antarctic (28.0%) Peter Scott (16.0%) Scott Fitzgerald (12.0%) Others (16.0%) Missing (28.0%)	- of the Antarctic (20.0%) Peter Scott (20.0%) Scott Walker (12.0%) Others (28.0%) Missing (20.0%)	Peter Scott (16.0%) - of the Antarctic (12.0%) Sir Walter Scott (12.0%) Others (44.0%) Missing (16.0%)	- of the Antarctic (32.0%) Peter Scott (32.0%) Others (28.0%) Missing (8.0%)
DUNCAN	Duncan Goodhew (32.0%) Others (24.0%) Missing (44.0%)	Duncan Goodhew (32.0%) Others (44.0%) Missing (24.0%)	Duncan Goodhew (36.0%) Duncan Edwards (12.0%) Others (36.0%) Missing (16.0%)	Duncan Goodhew (28.0%) King Duncan (12.0%) Others (48.0%) Missing (12.0%)

Ambiguous Names Study
Total Number of Responses to Ambiguous Names, by Age Group

Appendix 3

CUE (Age Groups)	Total Responses (n=1690)	Response Types (n=309)	In 10-29 years	5%+ Responses (n=1334)	Response Types (n=85)	Responses 10-29 years	10-19 years
CHARLES	**92**	**13**	**52.2%**	**71**	**2**	**45.1%**	**26.8%**
30-39			60.9%			61.1%	27.8%
40-49			52.2%			41.2%	17.6%
50-59			47.6%			41.2%	35.3%
60-70			48.0%			36.8%	26.8%
STEWART	**87**	**13**	**64.8%**	**74**	**4**	**72.0%**	**33.3%**
30-39			68.2%			77.8%	55.6%
40-49			73.9%			80.0%	15.0%
50-59			50.0%			61.1%	33.3%
60-70			66.7%			68.4%	31.6%
JAMES	**86**	**28**	**64.7%**	**50**	**7**	**75.5%**	**38.8%**
30-39			85.7%			84.6%	61.5%
40-49			52.4%			75.0%	25.0%
50-59			80.0%			85.7%	35.7%
60-70			43.5%			57.1%	28.6%
GRAHAM	**92**	**22**	**57.8%**	**62**	**6**	**62.9%**	**30.6%**
30-39			68.2%			72.2%	44.4%
40-49			78.3%			75.0%	56.3%
50-59			47.8%			57.1%	7.1%
60-70			36.4%			42.9%	7.1%

Appendix 3 cont'd

CUE (Age Groups)	Total Responses (n=1690)	Response Types (n=309)	In 10-29 years	5%+ Responses (n=1334)	Response Types (n=85)	Responses 10-29 years	10-19 years
MONTGOMERY	**82**	**7**	**74.4%**	**68**	**2**	**82.1%**	**58.6%**
30-39			70.6%			87.5%	71.4%
40-49			72.2%			78.6%	50.0%
50-59			68.2%			68.4%	54.5%
60-70			84.0%			94.4%	60.0%
GEORGE	**89**	**28**	**56.2%**	**54**	**5**	**57.4%**	**24.1%**
30-39			70.8%			80.0%	40.0%
40-49			72.0%			72.2%	44.4%
50-59			47.6%			57.1%	7.1%
60-70			26.3%			16.7%	0.0%
RUTH	**79**	**13**	**51.9%**	**62**	**3**	**50.0%**	**22.6%**
30-39			61.1%			50.0%	28.6%
40-49			29.4%			25.0%	0.0%
50-59			57.1%			60.0%	33.3%
60-70			56.5%			64.7%	29.4%
NEVILLE	**74**	**15**	**72.0%**	**60**	**4**	**71.7%**	**55.0%**
30-39			84.6%			85.7%	57.1%
40-49			77.8%			81.3%	62.5%
50-59			68.4%			68.8%	62.5%
60-70			64.0%			61.9%	42.9%

Appendix 3 cont'd

CUE (Age Groups)	Total Responses (n=1690)	Response Types (n=309)	In 10-29 years	5%+ Responses (n=1334)	Response Types (n=85)	Responses 10-29 years	10-19 years
HOWARD	**87**	**16**	**54.5%**	**77**	**7**	**55.8%**	**28.6%**
30-39			61.9%			60.0%	46.7%
40-49			43.5%			42.9%	23.8%
50-59			54.5%			60.0%	30.0%
60-70			59.1%			61.9%	19.0%
DEAN	**86**	**11**	**73.3%**	**69**	**2**	**79.7%**	**42.0%**
30-39			81.0%			87.5%	50.0%
40-49			70.0%			85.7%	57.1%
50-59			85.7%			90.0%	45.0%
60-70			58.3%			57.9%	21.1%
HARRISON	**94**	**7**	**56.4%**	**90**	**3**	**55.6%**	**23.3%**
30-39			68.2%			71.4%	23.8%
40-49			69.2%			66.7%	33.3%
50-59			50.0%			50.0%	31.8%
60-70			37.5%			34.8%	4.3%
HOLLY	**78**	**10**	**52.6%**	**66**	**3**	**54.5%**	**30.3%**
30-39			52.9%			53.3%	20.0%
40-49			61.9%			57.9%	42.1%
50-59			63.2%			76.9%	61.5%
60-70			33.3%			36.8%	5.3%

Appendix 3 cont'd

CUE (Age Groups)	Total Responses (n=1690)	Response Types (n=309)	In 10-29 years	5%+ Responses (n=1334)	Response Types (n=85)	Responses 10-29 years	10-19 years
RICHARD	**89**	**28**	**56.2%**	**45**	**4**	**57.8%**	**34.1%**
30-39			65.0%			40.0%	20.0%
40-49			63.6%			53.8%	53.8%
50-59			65.2%			84.6%	7.7%
THOMAS	**89**	**22**	**60.7%**	**63**	**4**	**61.9%**	**34.9%**
30-39			65.0%			69.2%	23.1%
40-49			56.5%			52.9%	35.3%
50-59			75.0%			72.2%	33.3%
60-70			45.5%			53.3%	46.7%
JOSEPH	**81**	**19**	**50.6%**	**66**	**7**	**48.5%**	**20.0%**
30-39			70.6%			71.4%	30.8%
40-49			61.9%			64.7%	11.8%
50-59			28.6%			18.8%	18.8%
60-70			45.5%			42.1%	21.1%
BLAKE	**73**	**14**	**73.2%**	**61**	**6**	**78.7%**	**44.3%**
30-39			92.9%			91.7%	33.3%
40-49			70.0%			81.3%	31.3%
50-59			65.0%			72.2%	44.4%
60-70			70.6%			73.3%	66.7%

Appendix 3 cont'd

CUE (Age Groups)	Total Responses (n=1690)	Response Types (n=309)	In 10-29 years	5%+ Responses (n=1334)	Response Types (n=85)	Responses 10-29 years	10-19 years
OSWALD	**84**	**4**	**81.0%**	**82**	**2**	**82.9%**	**57.3%**
30-39			75.0%			75.0%	50.0%
40-49			91.3%			91.3%	78.3%
50-59			95.0%			95.0%	50.0%
60-70			64.0%			69.6%	47.8%
DYLAN	**90**	**3**	**80.4%**	**89**	**2**	**82.0%**	**44.9%**
30-39			95.0%			94.7%	47.7%
40-49			91.7%			91.7%	66.7%
50-59			87.0%			87.0%	39.1%
60-70			52.0%			56.5%	26.1%
SCOTT	**82**	**19**	**72.0%**	**63**	**5**	**76.2%**	**60.3%**
30-39			88.9%			86.7%	80.0%
40-49			80.0%			86.7%	66.7%
50-59			71.4%			71.4%	50.0%
60-70			52.2%			63.2%	47.4%
DUNCAN	**76**	**17**	**45.3%**	**62**	**7**	**48.4%**	**23.0%**
30-39			64.3%			61.5%	30.8%
40-49			47.4%			53.3%	26.7%
50-59			40.0%			50.0%	20.0%
60-70			36.4%			33.3%	16.7%

Public and Private Events
Distribution of Public and Private Events From Across the Lifespan, by Age Group

Appendix 4

	30-39 Group			40-49 Group			50-59 Group			60-70 Group			All Groups		
	Total	Mean	S.D	Total	Mean	S.D	Total	Mean	S.D	Total	Mean	S.D.	Total	Mean	S.D.
Private 0-9	15	0.60	1.08	10	0.40	0.65	22	0.88	1.56	19	0.76	1.09	66	0.66	1.12
Private 10-19	86	3.44	2.45	58	2.32	1.73	71	2.84	2.01	64	2.56	1.80	279	2.79	2.03
Private 20-39	113	4.52	3.47	95	3.80	2.40	117	4.68	3.42	72	2.88	2.15	397	3.97	2.96
Private 30-39	84	3.36	2.98	88	3.52	2.57	50	2.00	1.47	50	2.00	1.66	272	2.72	2.34
Private 40-49				56	2.24	2.15	75	3.00	2.69	34	1.36	1.60	165	1.65	2.18
Private 50-59							47	1.88	2.13	57	2.28	2.11	104	1.04	1.81
Private 60-70										37	1.48	1.33	37	0.37	0.92
Public 0-9	38	1.52	1.73	22	0.88	1.39	54	2.16	2.49	35	1.40	1.15	149	1.49	1.80
Public 10-19	71	2.84	2.95	92	3.68	3.15	51	0.04	1.79	86	3.44	2.84	300	3.00	2.77
Public 20-29	105	4.20	3.51	48	1.92	1.75	65	2.60	2.14	46	1.84	1.97	264	2.64	2.59
Public 30-39	89	3.56	2.74	73	2.92	2.60	39	1.56	1.23	30	1.20	1.12	231	2.31	2.25
Public 40-49				51	2.04	2.09	61	2.44	2.22	27	1.08	1.50	139	1.39	1.92
Public 50-59							43	1.72	2.05	34	1.36	1.38	77	0.77	1.45
Public 60-70										34	1.36	1.82	34	0.34	1.08

Public and Private Events
Classifications for Event Types

Appendix 5

(a): All Categories

Public Events	Private Events
Murder/Assassination	Marriage/Divorce
Births/Deaths	Births/Deaths
Marriage/Divorce	Employment
Political	Education
War/Terrorism	Home
Sport/Entertainment	Religion/Spiritual
Public Service	Leisure
Disasters	Illness
Space	Relationship
Royal Anniversaries	Miscellaneous
Miscellaneous	

(b): Merged Categories

Public Events	Private Events
War/Murder	Relationships
Political	Births/Deaths
Family/(Royal)	Work/Education
Sports/Ents.	Home/Leisure
News Events	Illness/Religion

Public and Private Events
Distribution of Event Types, by Age Group, All Responses

Appendix 6

Public Events (n = 1,194)	30 - 39	40 - 49	50 - 59	60 - 70	Totals
Murder/Assassination	23.4	33.0	25.5	18.1	100%
Births/Deaths	28.6	16.3	30.6	24.5	100%
Marriage/Divorce	30.0	25.0	15.0	30.0	100%
Political	26.7	26.1	28.2	18.9	100%
War/Terrorism	22.8	13.8	25.4	37.9	100%
Sport/Entertainment	37.5	31.3	13.4	17.9	100%
Public Service	9.1	24.2	35.4	31.3	100%
Disasters	44.6	31.1	20.3	4.1	100%
Space	25.4	34.9	23.8	15.9	100%
Royal Anniversaries	15.0	13.3	28.3	43.3	100%
Miscellaneous	15.9	13.6	43.2	27.3	100%

Private Events (n = 1,320)	30 - 39	40 - 49	50 - 59	60 - 70	Totals
Births/Deaths	17.4	20.5	32.6	29.5	100%
Employment	21.6	17.6	29.1	31.7	100%
Education	20.8	22.9	34.7	22.5	100%
Home	25.2	24.3	20.9	29.6	100%
Religion/Spiritual	18.8	50.0	12.5	18.8	100%
Leisure	35.3	23.3	26.4	15.0	100%
Illness	13.2	32.4	30.9	23.5	100%
Relationship	31.0	20.2	35.7	13.1	100%
Miscellaneous	23.3	30.0	28.3	18.3	100%

Public and Private Events
Public Events, First Responses

Appendix 7

30 to 39 Group	Age at Event	50 to 59 Group	Age at Event
John Lennon's funeral	20	Bombing Israelis at Olympics	32
Churchill's funeral	3	End of WW2	5
Princess Diana's death	35	End of WW2	7
1997 General Election	38	Queen's Coronation	6
1997 General Election	33	Death of George VI	12
1981 Hunger Strikes	19	Men on Moon	30
Tianemen Square	30	Outbreak of WW2	2
Moon Landing	11	Victory in Europe	2
Falklands War	16	Break-up of Soviet	41
Fall of Berlin Wall	30	Building Berlin Wall	16
Silver Jubilee –Queen's Bristol Visit	13	Invention of transistor	7
End of Vietnam War	6	Creation of Welfare State	5
Princess Diana's death	34	V.E. Day	4
Tianemen Square	23	Death of George VI	12
Silver Jubilee	10	Kennedy Assassination	17
Gulf War	24	Coronation	16
Silver Jubilee	11	Charles & Di Wedding	33
First Woman PM	18	Coronation	9
IRA Cease-fire	33	First Moon Landing	24
1966 World Cup Final	7	Perestroika	40
Live Aid	22	The Beatles	18
Sadat Assassination	18	Festival of Britain	10
Americans leaving Vietnam	10	1997 Labour Victory	50
Decimalization	13	Queen's Coronation	10
M.L King Assas.	4	End of WW2	4

40 to 49 Group		60 to 70 Group	
Child Murder	13	Outbreak of WW2	2
Collapse of Russian Rep.	32	Outbreak of WW2	7
Kennedy Assassination	10	Outbreak of WW2	12
Pope's London Visit	34	Silver Jubilee	31
Vietnam War	11	Outbreak of WW2	9
Queen's Coronation	2	Abdication	4
Kennedy Assassination	12	Coronation	22
Aberfan Disaster	14	Death of George VI	14
Silver Jubilee	25	Outbreak of WW2	6
Fred West Trial	47	Outbreak of WW2	15
Queen's Coronation	1	Bombing	9
Rome Olympics	5	Coronation	19
Fall of Berlin Wall	37	Coronation	7
Report of apartheid/ segregation	7	Outbreak of WW2	7
Irish Conflict	12	Outbreak of WW2	4
1966 World Cup	16	Kennedy Assassination	33
Aberfan Disaster	17	Outbreak of WW2	2
Fall of Berlin Wall	40	Bombed out in WW2	12
Gargarin Space Flight	13	Depression	5
Assass. M.L.King	7	End of Apartheid	59
Moon landing	11	Visit at Tandy	19
Korean War	5	End of WW2	9
Reunification of Germany	38	Labour Victory 1997	65
Kennedy Assassination	15	Outbreak of WW2	11
Kennedy Assassination	14	Free NHS	4

Erikson's Psychosocial Stages

Appendix 8

Lifecyle Stage	Psychosocial Crises
Old Age	Integrity vs Despair
Adulthood	Generativity vs Stagnation
Young Adulthood	Intimacy vs Isolation
Adolescence	Identity vs Identity Confusion
School Age	Industry vs Inferiority
Play Age	Initiative vs Guilt
Early Childhood	Autonomy vs Shame, Doubt
Infancy	Basic Trust vs Basic Mistrust

After Erikson (1985), p. 32-33

'Erikson 1'
Memory Types/Goals, by Psychosocial Stage

Appendix 9

Childhood

A* to be helped, taught or nurtured/or want to be
B encounters with parents, family members or teachers
C* to play with, have fun

Identity/ID Confusion

D encounters with friends, peers
E* to get approval or validation from others; recognition; esteem, acceptance from friends/peers OR their disapproval/rejection
F* to avoid others, avoid conflict, pain or to move away from
G* to assert self against others; control, insist upon expressing own point of view

Intimacy/Isolation

H* to be reciprocally loved - achieving mutual connection/intimacy; intimate relationships*
I concern for self/mate

Generativity/Stagnation

J* to be concerned about others' welfare /uncaring
K taking care of others who need it, e.g. child-rearing, teaching, demonstrating, supervising - could be children, adults, employees etc. - could even be animals
L encounters with partners, children, grandchildren
M birth of children/ grandchildren (when no other details)

Integrity/Despair

N awareness of various lifestyles but defending own against threat
O nearness of death; fear of it; wish for it
P life has been meaningful/meaningless
Q people, things, products have been taken care of - have done their bit! / Retirement

* after Thorne (1995)

Appendix 10

RATING SCALES

KEEP THIS IN FRONT OF YOU WHILE RATING YOUR MEMORIES

Importance: This is a rating of how personally important the experience was to you. The scale is as follows:

1 Not important
2 Some importance
3 Important
4 Very important
5 Amongst the most important experiences I have ever had

Vividness: This is a rating of how detailed and clear your memory is

1 No images, vague memory
2 A few details
3 Normal clarity - about the same degree of vividness I have for any memory
4 Detailed and vivid
5 Extremely vivid, among the most vivid memories I can recollect

Intensity: This is a rating of the degree of emotional intensity of the experience.

1 No emotion
2 Some feelings
3 Moderate intensity
4 High intensity
5 Extremely intense - among the most intensely emotional experiences I have had.

Rehearsal: This is a rating of how often you have thought about this memory in the past

1 Not at all
2 Very rarely
3 Occasionally
4 Frequently
5 Very frequently, it is one of the memories I think about most often.

Appendix 11

Booklet completed by 78 year-old female participant

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED THIS ONE

No.

On the following pages, you will be asked to recall the first memory that comes to mind from different periods in your life.

Memories should be of events in your life which occurred over a period of seconds, minutes, hours - but no longer than a day. For each memory please include:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

Thank you for your participation, please be assured that all materials will be kept in the strictest confidence and used only for the purpose of this research.

Alison Holmes

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED THIS ONE

(55) F78.

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were under 10 years old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day - please describe:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

I was about 3 yrs old. I sat at the front door which was open and the rain was coming down heavily + splashing into the passage. a large black octopus passed + then tried to come in for shelter — my mother was in the front room sewing on the treadle machine. I enjoyed the excitement of the rain - fresh + open somehow. C

Imp...3.... Viv..4.... Int..4.... Reh..3.... A..3....

My first day at school when I was 5 years old - there were no nursery schools - so I felt completely abandoned and strange - when we set the Lords prayer I thought of my mother + sobbed + sobbed. The teacher held me on her knee — her name was Miss Patterson + I remember the smell of her. A

Imp..5.... Viv...4... Int...5.... Reh...3... A...5....

Imp...5... Viv...4... Int...5... Reh...3... A...5...

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED THIS ONE

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were between 10 and 19 years old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day - please describe:

where you were at the time
what you were doing
who was there
how you felt
any other details that come to mind

.....I..was...nearly...eleven..years..old...and...had not..yet...gone..to..secondary...School....We...were in Assembly....N..I...was...near...the back..so..couldn't hear..the..headmistress..Everyone began to..clap...so I joined...in...to..my..embarassment..They...were clapping me—I'd got..a..special..scholarship..to..the..High School!

Imp.....2.. Viv...4... Int.....2..... Reh..3... A....10½ .

E

.....I was...about...15 yrs...o...staying...with...my School friends...at...the..farm.....the two...sisters had..arranged..for..us..to..go..to...dance..at...to.....my honor..I..was..paired..off...with..a..farmhand. who..tried..to..put...his..hand...up...my...dress. I..was...very...frightened..+...shocked.....My..friends had put me..with..him on purpose+laughed.

Imp...2... Viv...4.... Int...3... Reh....2... A....15.

D

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Imp..... Viv..... Int..... Reh..... A.....

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED THIS TASK

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were between 20 and 29 years old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day, please describe:

where you were
what you were doing
who was there
how you felt
any other details that come to mind

19+

I was living in Bridlington having passed the Civil Service Exam - had to leave home. My parents took me to my 'digs' and then left for home at 8.0pm. My new landlady told me to go for "a nice walk along the front". I dutifully did so breaking my heart feeling so very lonely. I think I felt disgusted with the insensibility of that woman. I

Imp..4.... Viv..5.... Int..5.... Reh..2.... A.....

I was walking on the beach with a rather nice boy who suddenly threw me to the ground (sand) and started behaving badly. Fortunately I talked my way out of the situation - I was very stupid & surprised but no harm done. D

Imp..3.... Viv..4.... Int..3.... Reh..1.... A..20....

Imp..... Viv..... Int..... Reh..... A.....

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were between 30 and 39 years old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day, please describe:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

.....I had two children aged 12 + 8 and.... was approached by an old colleague and.... asked if I would consider taking a job with... Unilever as a clerk/typist. I was very nervous. about it but asked it + sadly my husband was furious but for once I said I would do it - I had a sort of excitement about going out to work + felt a bit rebellious.

Imp...3... Viv...2... Int...2... Reh...2... A...36...

G

.....This was a funny episode; I was working at Borough Engineer's office: and the floor had been recently polished + so I entered my office I slipped + fell full length at the feet of my boss.....

.....

Imp...1... Viv...4... Int...3... Reh...2... A...36

R.

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Imp..... Viv..... Int..... Reh..... A.....

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were between 40 and 49 years old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day, please describe:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

E

...I was Hb and being interviewed for ... acceptance on a course at Newcastle University. My marriage had broken down 6 years ago & I was working in Child Care & wanted to be properly trained. After a lot of searching they turned me down because of my broken marriage. I felt devastated but as I said I would therefore be working without qualification I would be rather dangerous' so they re-considered & accepted me - I felt rather 'second-hand' but relieved. .....

Imp..... Viv..... Inj..... Reh..... A.....

I

...I was 47 & just home from university when my son got married. After the bride & groom had left I went home & uttered a long loud scream - I had lost my son! or I thought I had .....

.....

Imp..4... Viv..4... Int..4... Reh..2... A..46...

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Imp..... Viv..... Int..... Reh..... A.....

DO NOT TURN PAGE UNTIL TOLD

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from when you ***were between 50 and 59 old.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day, please describe:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

E.

I was 52 years old and preparing breakfast for my two children (teenagers). Michael was staying up for a short time. The post came & I opened the envelope to find I had successfully passed my final (DMA) diploma. I was so surprised I rang my tutor (who was in the middle of shaving) to check that no mistake had been made. I was pleased but very humble about it.

Imp..... Viv..... Int..... Reh..... A.....

R.

I was working as a Consultant Adviser in Warwickshire & we had a new director — he was not very popular. He asked me to present a paper to committee about changing an establ. I lost my nerve and made a mess of it.

Imp..2... Viv..3... Int...3.. Reh...2.. A..54

Imp..... Viv..... Int..... Reh..... A.....

DO NOT TURN PAGE UNTIL YOU HAVE COMPLETED THIS

No.

In the next 5 minutes, please write brief descriptions of the first memories that come to mind from ***when you turned 60 to date.***

For each memory, which should be of an event which occurred over a period of seconds, minutes, hours - but no longer than a day, please describe:

where you were at the time
what you were doing
who was there
how you felt
+ any other details that come to mind

I

.....I was 67 and had been retired for a.... few years. I decided to learn Greek in difference to a happy holiday in Cyprus. Opposite the Folk House was Manpower & they wanted clerks for the flotation's currently taking place. I popped in to see what it was about & couldn't believe that within ½ hr I had been tested + mug-shot. I felt wonderful - & so reassured that I was still employable.

Imp...3... Viv..4... Int..3... Reh...2... A..67.

P.

.....~~How~~ Recently I had my 78th birthday & as I had just passed RSA I.T. certificates my son & daughter bought me a computer for my birthday. I couldn't believe it — life is not over after all! It gave me a boost.....

.....

Imp..2.... Viv.....4.. Int..4.... Reh.....3.. A..78...

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Imp..... Viv..... Int..... Reh..... A.....

'Erikson 2'
Memory Types/Goals, by Psychosocial Stage

Appendix 12

Childhood

1[1]	Being, or wanting to be, helped, taught or nurtured
7	Having fun, playing
11	Encounter with parents, family members or teachers

Identity/ID Confusion

3	Encounters with friends or peers;
9	Getting recognition; esteem or acceptance OR disapproval/rejection from friends/peers;
10	Avoiding other, Or avoiding conflict;

Intimacy/Isolation

4	Being reciprocally loved - achieving mutual connection/intimacy;
8	Being concerned, or unconcerned for your partner;
13	Being concerned. Or unconcerned for yourself;

Generativity/Stagnation

6	Taking care of others who needed it, e.g. child-rearing, teaching, demonstrating, supervising – (could have been children, adults, employees even animals);
12	An encounter with your partner, children or grandchildren;
14	Being either concerned or unconcerned about the welfare of another (not your partner);

Integrity/Despair

2	Being aware of various lifestyles but defending own;
5	Being aware of your own mortality;
15	An event that made you feel that things had been taken care of that you had done your bit.

[1] order of presentation

PLEASE DO NOT TURN PAGE UNTIL INSTRUCTED TO DO SO

Appendix 13

In next 3 minutes, please write a brief description of the first memory that comes to mind of an event in your life related to:

Being, or wanting to be, helped, taught or nurtured;

The memory should be of an event which occurred over a period of minutes, hours, but no longer than a day. For each memory recorded, please include:

where you were at the time
what you were doing
who was there
how you felt
and, any other details that come to mind

Ratings: (please circle)

Importance:	1	2	3	4	5
Vividness:	1	2	3	4	5
Intensity:	1	2	3	4	5
Rehearsal:	1	2	3	4	5

Statistical Summary

Ambiguous Names: Age Group 30-39

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
TYPE	Sphericity Assumed	.320	1	.320	.342	.564
	Greenhouse-Geisser	.320	1.000	.320	.342	.564
	Huynh-Feldt	.320	1.000	.320	.342	.564
	Lower-bound	.320	1.000	.320	.342	.564
Error(TYPE)	Sphericity Assumed	22.430	24	.935		
	Greenhouse-Geisser	22.430	24.000	.935		
	Huynh-Feldt	22.430	24.000	.935		
	Lower-bound	22.430	24.000	.935		
DECADE	Sphericity Assumed	664.740	3	221.580	25.383	.000
	Greenhouse-Geisser	664.740	2.345	283.453	25.383	.000
	Huynh-Feldt	664.740	2.615	254.197	25.383	.000
	Lower-bound	664.740	1.000	664.740	25.383	.000
Error(DECADE)	Sphericity Assumed	628.510	72	8.729		
	Greenhouse-Geisser	628.510	56.284	11.167		
	Huynh-Feldt	628.510	62.761	10.014		
	Lower-bound	628.510	24.000	26.188		
TYPE * DECADE	Sphericity Assumed	288.840	3	96.280	21.044	.000
	Greenhouse-Geisser	288.840	2.287	126.287	21.044	.000
	Huynh-Feldt	288.840	2.541	113.657	21.044	.000
	Lower-bound	288.840	1.000	288.840	21.044	.000
Error(TYPE*DECADE)	Sphericity Assumed	329.410	72	4.575		
	Greenhouse-Geisser	329.410	54.892	6.001		
	Huynh-Feldt	329.410	60.992	5.401		
	Lower-bound	329.410	24.000	13.725		

Ambiguous Names: Age Group 30-39 .

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
TYPE	Pillai's Trace	.014	.342[a]	1.000	24.000	.564
	Wilks' Lambda	.986	.342[a]	1.000	24.000	.564
	Hotelling's Trace	.014	.342[a]	1.000	24.000	.564
	Roy's Largest Root	.014	.342[a]	1.000	24.000	.564
DECADE	Pillai's Trace	.881	54.523[a]	3.000	22.000	.000
	Wilks' Lambda	.119	54.523[a]	3.000	22.000	.000
	Hotelling's Trace	7.435	54.523[a]	3.000	22.000	.000
	Roy's Largest Root	7.435	54.523[a]	3.000	22.000	.000
TYPE * DECADE	Pillai's Trace	.706	17.590[a]	3.000	22.000	.000
	Wilks' Lambda	.294	17.590[a]	3.000	22.000	.000
	Hotelling's Trace	2.399	17.590[a]	3.000	22.000	.000
	Roy's Largest Root	2.399	17.590[a]	3.000	22.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: TYPE+DECADE+TYPE*DECADE

Ambiguous Names: Age Group 40-49

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
TYPE	Sphericity Assumed	.676	1	.676	1.445	.241
	Greenhouse-Geisser	.676	1.000	.676	1.445	.241
	Huynh-Feldt	.676	1.000	.676	1.445	.241
	Lower-bound	.676	1.000	.676	1.445	.241
Error(TYPE)	Sphericity Assumed	11.224	24	.468		
	Greenhouse-Geisser	11.224	24.000	.468		
	Huynh-Feldt	11.224	24.000	.468		
	Lower-bound	11.224	24.000	.468		
DECADE	Sphericity Assumed	599.344	4	149.836	16.393	.000
	Greenhouse-Geisser	599.344	2.355	254.508	16.393	.000
	Huynh-Feldt	599.344	2.628	228.103	16.393	.000
	Lower-bound	599.344	1.000	599.344	16.393	.000
Error(DECADE)	Sphericity Assumed	877.456	96	9.140		
	Greenhouse-Geisser	877.456	56.518	15.525		
	Huynh-Feldt	877.456	63.060	13.915		
	Lower-bound	877.456	24.000	36.561		
TYPE * DECADE	Sphericity Assumed	403.744	4	100.936	25.919	.000
	Greenhouse-Geisser	403.744	2.641	152.849	25.919	.000
	Huynh-Feldt	403.744	2.998	134.663	25.919	.000
	Lower-bound	403.744	1.000	403.744	25.919	.000
Error(TYPE*DECADE)	Sphericity Assumed	373.856	96	3.894		
	Greenhouse-Geisser	373.856	63.395	5.897		
	Huynh-Feldt	373.856	71.956	5.196		
	Lower-bound	373.856	24.000	15.577		

Ambiguous Names: Age Group 40-49

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
TYPE	Pillai's Trace	.057	1.445[a]	1.000	24.000	.241
	Wilks' Lambda	.943	1.445[a]	1.000	24.000	.241
	Hotelling's Trace	.060	1.445[a]	1.000	24.000	.241
	Roy's Largest Root	.060	1.445[a]	1.000	24.000	.241
DECADE	Pillai's Trace	.942	85.104[a]	4.000	21.000	.000
	Wilks' Lambda	.058	85.104[a]	4.000	21.000	.000
	Hotelling's Trace	16.210	85.104[a]	4.000	21.000	.000
	Roy's Largest Root	16.210	85.104[a]	4.000	21.000	.000
TYPE * DECADE	Pillai's Trace	.848	29.373[a]	4.000	21.000	.000
	Wilks' Lambda	.152	29.373[a]	4.000	21.000	.000
	Hotelling's Trace	5.595	29.373[a]	4.000	21.000	.000
	Roy's Largest Root	5.595	29.373[a]	4.000	21.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: TYPE+DECADE+TYPE*DECADE

Ambiguous Names: Age Group 50-59

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
TYPE	Sphericity Assumed	1.333E-02	1	1.333E-02	.031	.863
	Greenhouse-Geisser	1.333E-02	1.000	1.333E-02	.031	.863
	Huynh-Feldt	1.333E-02	1.000	1.333E-02	.031	.863
	Lower-bound	1.333E-02	1.000	1.333E-02	.031	.863
Error(TYPE)	Sphericity Assumed	10.487	24	.437		
	Greenhouse-Geisser	10.487	24.000	.437		
	Huynh-Feldt	10.487	24.000	.437		
	Lower-bound	10.487	24.000	.437		
DECADE	Sphericity Assumed	453.267	5	90.653	9.455	.000
	Greenhouse-Geisser	453.267	3.064	147.930	9.455	.000
	Huynh-Feldt	453.267	3.563	127.203	9.455	.000
	Lower-bound	453.267	1.000	453.267	9.455	.005
Error(DECADE)	Sphericity Assumed	1150.567	120	9.588		
	Greenhouse-Geisser	1150.567	73.538	15.646		
	Huynh-Feldt	1150.567	85.520	13.454		
	Lower-bound	1150.567	24.000	47.940		
TYPE * DECADE	Sphericity Assumed	616.187	5	123.237	29.618	.000
	Greenhouse-Geisser	616.187	3.337	184.650	29.618	.000
	Huynh-Feldt	616.187	3.941	156.365	29.618	.000
	Lower-bound	616.187	1.000	616.187	29.618	.000
Error(TYPE*DECADE)	Sphericity Assumed	499.313	120	4.161		
	Greenhouse-Geisser	499.313	80.089	6.234		
	Huynh-Feldt	499.313	94.577	5.279		
	Lower-bound	499.313	24.000	20.805		

Ambiguous Names: Age Group 50-59

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
TYPE	Pillai's Trace	.001	.031[a]	1.000	24.000	.863
	Wilks' Lambda	.999	.031[a]	1.000	24.000	.863
	Hotelling's Trace	.001	.031[a]	1.000	24.000	.863
	Roy's Largest Root	.001	.031[a]	1.000	24.000	.863
DECADE	Pillai's Trace	.900	35.887[a]	5.000	20.000	.000
	Wilks' Lambda	.100	35.887[a]	5.000	20.000	.000
	Hotelling's Trace	8.972	35.887[a]	5.000	20.000	.000
	Roy's Largest Root	8.972	35.887[a]	5.000	20.000	.000
TYPE * DECADE	Pillai's Trace	.911	41.050[a]	5.000	20.000	.000
	Wilks' Lambda	.089	41.050[a]	5.000	20.000	.000
	Hotelling's Trace	10.263	41.050[a]	5.000	20.000	.000
	Roy's Largest Root	10.263	41.050[a]	5.000	20.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: TYPE+DECADE+TYPE*DECADE

Ambiguous Names: Age Group 60-70

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
TYPE	Sphericity Assumed	.140	1	.140	.370	.549
	Greenhouse-Geisser	.140	1.000	.140	.370	.549
	Huynh-Feldt	.140	1.000	.140	.370	.549
	Lower-bound	.140	1.000	.140	.370	.549
Error(TYPE)	Sphericity Assumed	9.074	24	.378		
	Greenhouse-Geisser	9.074	24.000	.378		
	Huynh-Feldt	9.074	24.000	.378		
	Lower-bound	9.074	24.000	.378		
DECADE	Sphericity Assumed	484.920	6	80.820	12.567	.000
	Greenhouse-Geisser	484.920	2.793	173.607	12.567	.000
	Huynh-Feldt	484.920	3.199	151.608	12.567	.000
	Lower-bound	484.920	1.000	484.920	12.567	.002
Error(DECADE)	Sphericity Assumed	926.080	144	6.431		
	Greenhouse-Geisser	926.080	67.037	13.814		
	Huynh-Feldt	926.080	76.764	12.064		
	Lower-bound	926.080	24.000	38.587		
TYPE * DECADE	Sphericity Assumed	644.440	6	107.407	26.355	.000
	Greenhouse-Geisser	644.440	2.505	257.304	26.355	.000
	Huynh-Feldt	644.440	2.820	228.534	26.355	.000
	Lower-bound	644.440	1.000	644.440	26.355	.000
Error(TYPE*DECADE)	Sphericity Assumed	586.846	144	4.075		
	Greenhouse-Geisser	586.846	60.110	9.763		
	Huynh-Feldt	586.846	67.677	8.671		
	Lower-bound	586.846	24.000	24.452		

Ambiguous Names: Age Group 60-70

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
TYPE	Pillai's Trace	.015	.370[a]	1.000	24.000	.549
	Wilks' Lambda	.985	.370[a]	1.000	24.000	.549
	Hotelling's Trace	.015	.370[a]	1.000	24.000	.549
	Roy's Largest Root	.015	.370[a]	1.000	24.000	.549
DECADE	Pillai's Trace	.909	31.615[a]	6.000	19.000	.000
	Wilks' Lambda	.091	31.615[a]	6.000	19.000	.000
	Hotelling's Trace	9.984	31.615[a]	6.000	19.000	.000
	Roy's Largest Root	9.984	31.615[a]	6.000	19.000	.000
TYPE * DECADE	Pillai's Trace	.908	31.360[a]	6.000	19.000	.000
	Wilks' Lambda	.092	31.360[a]	6.000	19.000	.000
	Hotelling's Trace	9.903	31.360[a]	6.000	19.000	.000
	Roy's Largest Root	9.903	31.360[a]	6.000	19.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: TYPE+DECADE+TYPE*DECADE

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
SONGS	80	4.00	31.00	977.00	12.2125	4.9034
FILMS	86	1.00	34.00	1156.00	13.4419	6.0694
Valid N (listwise)	78					

Recalling Music and Films

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SONGS	12.2308	78	4.8159	.5453
	FILMS	13.5641	78	6.1867	.7005

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	SONGS & FILMS	78	.668	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	SONGS - FILMS	-1.3333	4.6561	.5272	-2.3831	-.2835	-2.529	77	.013

Public and Private Events: All Events

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TOT.PUB	11.9400	100	5.7732	.5773
	TOT.PRIV	13.2000	100	5.5868	.5587

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	TOT.PUB & TOT.PRIV	100	.540	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	TOT.PUB - TOT.PRIV	-1.2600	5.4525	.5452	-2.3419	-.1781	-2.311	99	.023

Public and Private Events: All Events

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
EVENT	Sphericity Assumed	6.125	1	6.125	2.281	.134
	Greenhouse-Geisser	6.125	1.000	6.125	2.281	.134
	Huynh-Feldt	6.125	1.000	6.125	2.281	.134
	Lower-bound	6.125	1.000	6.125	2.281	.134
Error(EVENT)	Sphericity Assumed	265.875	99	2.686		
	Greenhouse-Geisser	265.875	99.000	2.686		
	Huynh-Feldt	265.875	99.000	2.686		
	Lower-bound	265.875	99.000	2.686		
DECADE	Sphericity Assumed	564.775	3	188.258	32.418	.000
	Greenhouse-Geisser	564.775	2.788	202.576	32.418	.000
	Huynh-Feldt	564.775	2.877	196.311	32.418	.000
	Lower-bound	564.775	1.000	564.775	32.418	.000
Error(DECADE)	Sphericity Assumed	1724.725	297	5.807		
	Greenhouse-Geisser	1724.725	276.008	6.249		
	Huynh-Feldt	1724.725	284.817	6.056		
	Lower-bound	1724.725	99.000	17.421		
EVENT * DECADE	Sphericity Assumed	127.375	3	42.458	10.837	.000
	Greenhouse-Geisser	127.375	2.645	48.154	10.837	.000
	Huynh-Feldt	127.375	2.724	46.752	10.837	.000
	Lower-bound	127.375	1.000	127.375	10.837	.001
Error(EVENT*DECADE)	Sphericity Assumed	1163.625	297	3.918		
	Greenhouse-Geisser	1163.625	261.870	4.444		
	Huynh-Feldt	1163.625	269.722	4.314		
	Lower-bound	1163.625	99.000	11.754		

Public and Private Events: All Events

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
EVENT	Pillai's Trace	.023	2.281[a]	1.000	99.000	.134
	Wilks' Lambda	.977	2.281[a]	1.000	99.000	.134
	Hotelling's Trace	.023	2.281[a]	1.000	99.000	.134
	Roy's Largest Root	.023	2.281[a]	1.000	99.000	.134
DECADE	Pillai's Trace	.586	45.831[a]	3.000	97.000	.000
	Wilks' Lambda	.414	45.831[a]	3.000	97.000	.000
	Hotelling's Trace	1.417	45.831[a]	3.000	97.000	.000
	Roy's Largest Root	1.417	45.831[a]	3.000	97.000	.000
EVENT * DECADE	Pillai's Trace	.228	9.546[a]	3.000	97.000	.000
	Wilks' Lambda	.772	9.546[a]	3.000	97.000	.000
	Hotelling's Trace	.295	9.546[a]	3.000	97.000	.000
	Roy's Largest Root	.295	9.546[a]	3.000	97.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: EVENT+DECADE+EVENT*DECADE

T-Test

Public and Private Events: All Events

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PUB 0	1.4900	100	1.8006	.1801
	PUB 1	3.0000	100	2.7670	.2767
Pair 2	PUB 1	3.0000	100	2.7670	.2767
	PUB 2	2.6400	100	2.5879	.2588
Pair 3	PUB 2	2.6400	100	2.5879	.2588
	PUB 3	2.3100	100	2.2505	.2250
Pair 4	PR0	.6600	100	1.1211	.1121
	PR1	2.7900	100	2.0315	.2032
Pair 5	PR1	2.7900	100	2.0315	.2032
	PR2	3.9700	100	2.9626	.2963
Pair 6	PR3	2.7200	100	2.3402	.2340
	PR4	1.6500	100	2.1806	.2181

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PUB 0 & PUB 1	100	.101	.316
Pair 2	PUB 1 & PUB 2	100	.127	.208
Pair 3	PUB 2 & PUB 3	100	.148	.143
Pair 4	PR0 & PR1	100	.283	.004
Pair 5	PR1 & PR2	100	.071	.482
Pair 6	PR3 & PR4	100	.181	.072

Public and Private Events: All Events

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	PUB 0 - PUB 1	-1.5100	3.1446	.3145	-2.1340	-.8860	-4.802	99	.000
Pair 2	PUB 1 - PUB 2	.3600	3.5406	.3541	-.3425	1.0625	1.017	99	.312
Pair 3	PUB 2 - PUB 3	.3300	3.1688	.3169	-.2988	.9588	1.041	99	.300
Pair 4	PR0 - PR1	-2.1300	2.0234	.2023	-2.5315	-1.7285	-10.527	99	.000
Pair 5	PR1 - PR2	-1.1800	3.4710	.3471	-1.8687	-.4913	-3.400	99	.001
Pair 6	PR3 - PR4	1.0700	2.8964	.2896	.4953	1.6447	3.694	99	.000

Novel Events:

T-Tests Comparisons with 3rd decade (20-29 years)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NOV0.9	8.16E-02	49	.28	3.95E-02
	NOV20.29	1.37	49	1.18	.17
Pair 2	NOV10.19	.57	49	.74	.11
	NOV20.29	1.37	49	1.18	.17
Pair 3	NOV20.29	1.37	49	1.18	.17
	NOV30.39	.67	49	.77	.11
Pair 4	NOV20.29	1.37	49	1.18	.17
	NOV40.49	.43	49	.58	8.25E-02
Pair 5	NOV20.29	1.37	49	1.18	.17
	NOV50.59	.29	49	.54	7.72E-02
Pair 6	NOV20.29	1.37	49	1.18	.17
	NOV60.69	.37	49	.57	8.09E-02
Pair 7	NOV20.29	1.37	49	1.18	.17
	N.70PLUS	.16	49	.43	6.08E-02

Novel Events:

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	NOV0.9 & NOV20.29	49	-.221	.128
Pair 2	NOV10.19 & NOV20.29	49	-.150	.303
Pair 3	NOV20.29 & NOV30.39	49	-.275	.056
Pair 4	NOV20.29 & NOV40.49	49	-.235	.104
Pair 5	NOV20.29 & NOV50.59	49	-.167	.250
Pair 6	NOV20.29 & NOV60.69	49	.012	.935
Pair 7	NOV20.29 & N.70PLUS	49	-.080	.584

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	NOV0.9 - NOV20.29	-1.29	1.27	.18	-1.65	-.92	-7.060	48	.000
Pair 2	NOV10.19 - NOV20.29	-.80	1.49	.21	-1.22	-.37	-3.750	48	.000
Pair 3	NOV20.29 - NOV30.39	.69	1.58	.23	.24	1.15	3.067	48	.004
Pair 4	NOV20.29 - NOV40.49	.94	1.43	.20	.53	1.35	4.580	48	.000
Pair 5	NOV20.29 - NOV50.59	1.08	1.38	.20	.68	1.48	5.479	48	.000
Pair 6	NOV20.29 - NOV60.69	1.00	1.31	.19	.62	1.38	5.356	48	.000
Pair 7	NOV20.29 - N.70PLUS	1.20	1.29	.18	.83	1.57	6.530	48	.000

Novel Events:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NOV0.9	8.16E-02	49	.28	3.95E-02
	NOV10.19	.57	49	.74	.11
Pair 2	NOV10.19	.57	49	.74	.11
	NOV20.29	1.37	49	1.18	.17
Pair 3	NOV10.19	.57	49	.74	.11
	NOV30.39	.67	49	.77	.11
Pair 4	NOV10.19	.57	49	.74	.11
	NOV40.49	.43	49	.58	8.25E-02
Pair 5	NOV10.19	.57	49	.74	.11
	NOV50.59	.29	49	.54	7.72E-02
Pair 6	NOV10.19	.57	49	.74	.11
	NOV60.69	.37	49	.57	8.09E-02
Pair 7	NOV10.19	.57	49	.74	.11
	N.70PLUS	.16	49	.43	6.08E-02

Novel Events:

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	NOV0.9 & NOV10.19	49	-.029	.842
Pair 2	NOV10.19 & NOV20.29	49	-.150	.303
Pair 3	NOV10.19 & NOV30.39	49	-.141	.334
Pair 4	NOV10.19 & NOV40.49	49	-.049	.738
Pair 5	NOV10.19 & NOV50.59	49	-.157	.281
Pair 6	NOV10.19 & NOV60.69	49	-.114	.434
Pair 7	NOV10.19 & N.70PLUS	49	-.105	.475

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	NOV0.9 - NOV10.19	-.49	.79	.11	-.72	-.26	-4.319	48	.000
Pair 2	NOV10.19 - NOV20.29	-.80	1.49	.21	-1.22	-.37	-3.750	48	.000
Pair 3	NOV10.19 - NOV30.39	-.10	1.14	.16	-.43	.23	-.626	48	.534
Pair 4	NOV10.19 - NOV40.49	.14	.96	.14	-.13	.42	1.044	48	.302
Pair 5	NOV10.19 - NOV50.59	.29	.98	.14	4.53E-03	.57	2.043	48	.047
Pair 6	NOV10.19 - NOV60.69	.20	.98	.14	-7.70E-02	.49	1.460	48	.151
Pair 7	NOV10.19 - N.70PLUS	.41	.89	.13	.15	.66	3.218	48	.002

'Erikson 1' Coded Memories

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
DECADE	Sphericity Assumed	5.473	6	.912	7.718	.000
	Greenhouse-Geisser	5.473	5.081	1.077	7.718	.000
	Huynh-Feldt	5.473	5.770	.948	7.718	.000
	Lower-bound	5.473	1.000	5.473	7.718	.008
Error(DECADE)	Sphericity Assumed	33.327	282	.118		
	Greenhouse-Geisser	33.327	238.803	.140		
	Huynh-Feldt	33.327	271.202	.123		
	Lower-bound	33.327	47.000	.709		
STAGE	Sphericity Assumed	26.113	4	6.528	23.628	.000
	Greenhouse-Geisser	26.113	2.802	9.320	23.628	.000
	Huynh-Feldt	26.113	2.998	8.711	23.628	.000
	Lower-bound	26.113	1.000	26.113	23.628	.000
Error(STAGE)	Sphericity Assumed	51.944	188	.276		
	Greenhouse-Geisser	51.944	131.684	.394		
	Huynh-Feldt	51.944	140.885	.369		
	Lower-bound	51.944	47.000	1.105		
DECADE * STAGE	Sphericity Assumed	149.254	24	6.219	29.588	.000
	Greenhouse-Geisser	149.254	10.184	14.656	29.588	.000
	Huynh-Feldt	149.254	13.224	11.287	29.588	.000
	Lower-bound	149.254	1.000	149.254	29.588	.000
Error(DECADE*STAGE)	Sphericity Assumed	237.089	1128	.210		
	Greenhouse-Geisser	237.089	478.652	.495		
	Huynh-Feldt	237.089	621.506	.381		
	Lower-bound	237.089	47.000	5.044		

'Erikson 1' Coded Memories

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
DECADE	Pillai's Trace	.485	6.589[a]	6.000	42.000	.000
	Wilks' Lambda	.515	6.589[a]	6.000	42.000	.000
	Hotelling's Trace	.941	6.589[a]	6.000	42.000	.000
	Roy's Largest Root	.941	6.589[a]	6.000	42.000	.000
STAGE	Pillai's Trace	.856	65.428[a]	4.000	44.000	.000
	Wilks' Lambda	.144	65.428[a]	4.000	44.000	.000
	Hotelling's Trace	5.948	65.428[a]	4.000	44.000	.000
	Roy's Largest Root	5.948	65.428[a]	4.000	44.000	.000
DECADE * STAGE	Pillai's Trace	.920	11.459[a]	24.000	24.000	.000
	Wilks' Lambda	.080	11.459[a]	24.000	24.000	.000
	Hotelling's Trace	11.459	11.459[a]	24.000	24.000	.000
	Roy's Largest Root	11.459	11.459[a]	24.000	24.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: DECADE+STAGE+DECADE*STAGE

'Erikson 1' Simple Main Effects for Repeated Measures

A = Decade (7 levels)
B = Stage (5 levels)

Summary Table

	Decades							
Stage	A1	A2	A3	A4	A5	A6	A7	Totals
B1	69	21	2	4	3	-	-	99
B2	9	53	20	9	9	10	8	118
B3	-	3	33	14	7	7	11	75
B4	2	4	21	34	37	25	17	140
B5	-	-	-	1	-	3	14	18
Totals	80	81	76	62	56	45	50	450

Effect of Decade on recall of Childhood type memories

a= 7; b= 5; s = 48; df(a-1)(b-1)(s-1) = 1128: MSerror[1] = .21

SSa at b1

$$\frac{(69)_2 + (21)_2 + (2)_2 + (4)_2 + (3)_2}{48} - \frac{(69 + 21 + 2 + 4 + 3 + 0 + 0)_2}{336}$$

$$= \frac{5429}{48} - \frac{9801}{336} = 113.104 - 29.17 = 83.934$$

Observed F

$$\frac{83.934}{.21} = 399.686, df(6,1128)$$

Critical F @ (6,>1000) = 3.74 at 0.001 level

p.<0.001, decade had an effect on recall of Childhood memories.

[1] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Decade on recall of Identity type memories

a= 7; b= 5; s = 48; df(a-1)(b-1)(s-1) = 1128: MSerror[2] = .21

SSa at b2

$$\frac{(9)_2 + (53)_2 + (20)_2 + (9)_2 + (9)_2 + (10)_2 + (8)_2}{48} - \frac{(9 + 53 + 20 + 9 + 9 + 10 + 8)_2}{336}$$

$$= \frac{3616}{48} - \frac{13924}{336} = 75.333 - 41.40 = 33.933$$

Observed F

$$\frac{33.933}{.21} = 161.587, df(6,1128)$$

Critical F @ (6,>1000) = 3.74 at 0.001 level

p.<0.001, decade had an effect on recall of Identity type memories.

[2] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Decade on recall of Intimacy type memories

a= 7; b= 5; s = 48; df(a-1)(b-1)(s-1) = 1128: MSerror[3] = .21

SSa at b3

$$\frac{(0)_2 + (3)_2 + (33)_2 + (14)_2 + (7)_2 + (7)_2 + (11)_2}{48} - \frac{(0 + 3 + 33 + 14 + 7 + 7 + 11)_2}{336}$$

$$= \frac{1513}{48} - \frac{5625}{336} = 31.521 - 16.741 = 14.780$$

Observed F

$$\frac{14.780}{.21} = 70.381, df(6,1128)$$

Critical F @ (6,>1000) = 3.74 at 0.001 level

p.<0.001, decade had an effect on recall of Intimacy type memories.

[3] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Decade on recall of Generativity type memories

a= 7; b= 5; s = 48; df(a-1)(b-1)(s-1) = 1128: MSerror[4] = .21

SSa at b4

$$\frac{(2)_2 + (4)_2 + (21)_2 + (34)_2 + (37)_2 + (25)_2 + (17)_2}{48} - \frac{(2 + 4 + 21 + 34 + 37 + 25 + 17)_2}{336}$$

$$= \frac{3900}{48} - \frac{19600}{336} = 81.25 - 58.333 = 22.917$$

Observed F

$$\frac{22.917}{.21} = 109.129, df(6,1128)$$

Critical F @ (6,>1000) = 3.74 at 0.001 level

p.<0.001, decade had an effect on recall of Generativity type memories.

[4] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Decade on recall of Integrity type memories

a= 7; b= 5; s = 48; df(a-1)(b-1)(s-1) = 1128: MSerror[5] = .21

SSa at b5

$$\frac{(0)_2 + (0)_2 + (0)_2 + (1)_2 + (3)_2 + (0)_2 + (14)_2}{48} - \frac{(1 + 3 + 14)_2}{336}$$

$$= \frac{206}{48} - \frac{324}{336} = 4.292 - 0.964 = 3.328$$

Observed F

$$\frac{3.328}{.21} = 15.846, \text{ df}(6,1128)$$

Critical F @ (6,>1000) = 3.74 at 0.001 level

p.<0.001, decade had an effect on recall of Integrity type memories.

[5] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

'Erikson 1' Coded Memories

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CH*0-9	1.4375	48	.7964	.1150
	CH*10-19	.4375	48	.6493	9.371E-02
Pair 2	CH*0-9	1.4375	48	.7964	.1150
	CH*20-29	4.167E-02	48	.2019	2.915E-02
Pair 3	CH*0-9	1.4375	48	.7964	.1150
	CH*30-39	8.333E-02	48	.2793	4.031E-02
Pair 4	CH*0-9	1.4375	48	.7964	.1150
	CH*40-49	6.250E-02	48	.2446	3.531E-02
Pair 5	CH*0-9	1.4375	48	.7964	.1150
	CH*50-59	.0000	48	.0000	.0000
Pair 6	CH*0-9	1.4375	48	.7964	.1150
	CH*60+	.0000	48	.0000	.0000
Pair 7	ID0-9	.1875	48	.4451	6.425E-02
	ID10-19	1.1042	48	.9280	.1340
Pair 8	ID10-19	1.1042	48	.9280	.1340
	ID20-29	.4167	48	.6790	9.800E-02
Pair 9	ID10-19	1.1042	48	.9280	.1340
	ID30-39	.1875	48	.3944	5.693E-02
Pair 10	ID10-19	1.1042	48	.9280	.1340
	ID40-49	.1875	48	.4906	7.081E-02
Pair 11	ID10-19	1.1042	48	.9280	.1340
	ID50-59	.2083	48	.4593	6.630E-02

'Erikson 1' Coded Memories

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 12	ID10-19	1.1042	48	.9280	.1340
	ID60+	.1667	48	.3766	5.436E-02
Pair 13	INT0-9	.0000	48	.0000	.0000
	INT20-29	.6875	48	.6890	9.945E-02
Pair 14	INT10-19	6.250E-02	48	.2446	3.531E-02
	INT20-29	.6875	48	.6890	9.945E-02
Pair 15	INT20-29	.6875	48	.6890	9.945E-02
	INT30-39	.2917	48	.4593	6.630E-02
Pair 16	INT20-29	.6875	48	.6890	9.945E-02
	INT40-49	.1458	48	.3567	5.148E-02
Pair 17	INT20-29	.6875	48	.6890	9.945E-02
	INT50-59	.1458	48	.3567	5.148E-02
Pair 18	INT20-29	.6875	48	.6890	9.945E-02
	INT60+	.2292	48	.4247	6.131E-02
Pair 19	GEN0-9	4.167E-02	48	.2019	2.915E-02
	GEN30-39	.7083	48	.7426	.1072
Pair 20	GEN-10-19	8.333E-02	48	.2793	4.031E-02
	GEN30-39	.7083	48	.7426	.1072
Pair 21	GEN20-29	.4375	48	.5800	8.372E-02
	GEN30-39	.7083	48	.7426	.1072
Pair 22	GEN30-39	.7083	48	.7426	.1072
	GEN40-49	.7708	48	.7217	.1042
Pair 23	GEN30-39	.7083	48	.7426	.1072
	GEN50-59	.5208	48	.5831	8.416E-02

'Erikson 1' Coded Memories

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 24	GEN30-39	.7083	48	.7426	.1072
	GEN60+	.3542	48	.5255	7.585E-02
Pair 25	GEN0-9	4.167E-02	48	.2019	2.915E-02
	GEN40-49	.7708	48	.7217	.1042
Pair 26	GEN-10-19	8.333E-02	48	.2793	4.031E-02
	GEN40-49	.7708	48	.7217	.1042
Pair 27	GEN20-29	.4375	48	.5800	8.372E-02
	GEN40-49	.7708	48	.7217	.1042
Pair 28	GEN40-49	.7708	48	.7217	.1042
	GEN50-59	.5208	48	.5831	8.416E-02
Pair 29	GEN40-49	.7708	48	.7217	.1042
	GEN60+	.3542	48	.5255	7.585E-02
Pair 30	GEN0-9	4.167E-02	48	.2019	2.915E-02
	GEN50-59	.5208	48	.5831	8.416E-02
Pair 31	GEN-10-19	8.333E-02	48	.2793	4.031E-02
	GEN50-59	.5208	48	.5831	8.416E-02
Pair 32	GEN20-29	.4375	48	.5800	8.372E-02
	GEN50-59	.5208	48	.5831	8.416E-02
Pair 33	GEN50-59	.5208	48	.5831	8.416E-02
	GEN60+	.3542	48	.5255	7.585E-02
Pair 34	INTEG0-9	.0000	48	.0000	.0000
	INTEG60+	.2917	48	.4593	6.630E-02
Pair 35	INTEG10-19	.0000	48	.0000	.0000
	INTEG60+	.2917	48	.4593	6.630E-02

'Erikson 1' Coded Memories

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 36	INTE20-29	.0000	48	.0000	.0000
	INTEG60+	.2917	48	.4593	6.630E-02
Pair 37	INTEG30-39	2.083E-02	48	.1443	2.083E-02
	INTEG60+	.2917	48	.4593	6.630E-02
Pair 38	INTEG40-49	.0000	48	.0000	.0000
	INTEG60+	.2917	48	.4593	6.630E-02
Pair 39	INTEG50-59	6.250E-02	48	.3200	4.619E-02
	INTEG60+	.2917	48	.4593	6.630E-02

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CH*0-9 - CH*10-19	1.0000	.9225	.1332	.7321	1.2679	7.510	47	.000
Pair 2	CH*0-9 - CH*20-29	1.3958	.8688	.1254	1.1435	1.6481	11.131	47	.000
Pair 3	CH*0-9 - CH*30-39	1.3542	.8119	.1172	1.1184	1.5899	11.556	47	.000
Pair 4	CH*0-9 - CH*40-49	1.3750	.8411	.1214	1.1308	1.6192	11.326	47	.000
Pair 5	CH*0-9 - CH*50-59	1.4375	.7964	.1150	1.2062	1.6688	12.505	47	.000
Pair 6	CH*0-9 - CH*60+	1.4375	.7964	.1150	1.2062	1.6688	12.505	47	.000
Pair 7	ID0-9 - ID10-19	-.9167	.8952	.1292	-1.1766	-.6567	-7.094	47	.000
Pair 8	ID10-19 - ID20-29	.6875	1.1878	.1714	.3426	1.0324	4.010	47	.000

'Erikson 1' Coded Memories

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 9	ID10-19 - ID30-39	.9167	1.0280	.1484	.6182	1.2152	6.178	47	.000
Pair 10	ID10-19 - ID40-49	.9167	1.0485	.1513	.6122	1.2211	6.057	47	.000
Pair 11	ID10-19 - ID50-59	.8958	1.0364	.1496	.5949	1.1968	5.989	47	.000
Pair 12	ID10-19 - ID60+	.9375	.9980	.1440	.6477	1.2273	6.508	47	.000
Pair 13	INT0-9 - INT20-29	-.6875	.6890	9.945E-02	-.8876	-.4874	-6.913	47	.000
Pair 14	INT10-19 - INT20-29	-.6250	.7889	.1139	-.8541	-.3959	-5.489	47	.000
Pair 15	INT20-29 - INT30-39	.3958	.7920	.1143	.1659	.6258	3.463	47	.001
Pair 16	INT20-29 - INT40-49	.5417	.7426	.1072	.3260	.7573	5.054	47	.000
Pair 17	INT20-29 - INT50-59	.5417	.7978	.1152	.3100	.7733	4.704	47	.000
Pair 18	INT20-29 - INT60+	.4583	.8982	.1296	.1975	.7191	3.535	47	.001
Pair 19	GEN0-9 - GEN30-39	-.6667	.7244	.1046	-.8770	-.4563	-6.376	47	.000
Pair 20	GEN-10-19 - GEN30-39	-.6250	.7614	.1099	-.8461	-.4039	-5.687	47	.000
Pair 21	GEN20-29 - GEN30-39	-.2708	.9165	.1323	-.5370	-4.71E-03	-2.047	47	.046
Pair 22	GEN30-39 - GEN40-49	-6.25E-02	.9980	.1440	-.3523	.2273	-.434	47	.666
Pair 23	GEN30-39 - GEN50-59	.1875	.8668	.1251	-6.42E-02	.4392	1.499	47	.141
Pair 24	GEN30-39 - GEN60+	.3542	.8627	.1245	.1037	.6047	2.844	47	.007
Pair 25	GEN0-9 - GEN40-49	-.7292	.7068	.1020	-.9344	-.5239	-7.148	47	.000
Pair 26	GEN-10-19 - GEN40-49	-.6875	.7761	.1120	-.9129	-.4621	-6.137	47	.000
Pair 27	GEN20-29 - GEN40-49	-.3333	.9302	.1343	-.6034	-6.32E-02	-2.483	47	.017
Pair 28	GEN40-49 - GEN50-59	.2500	.7855	.1134	2.191E-02	.4781	2.205	47	.032
Pair 29	GEN40-49 - GEN60+	.4167	.8208	.1185	.1783	.6550	3.517	47	.001
Pair 30	GEN0-9 - GEN50-59	-.4792	.5454	7.872E-02	-.6375	-.3208	-6.087	47	.000
Pair 31	GEN-10-19 - GEN50-59	-.4375	.6812	9.833E-02	-.6353	-.2397	-4.449	47	.000

'Erikson 1' Coded Memories

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 32	GEN20-29 - GEN50-59	-8.33E-02	.7672	.1107	-.3061	.1394	-.753	47	.455
Pair 33	GEN50-59 - GEN60+	.1667	.7244	.1046	-4.37E-02	.3770	1.594	47	.118
Pair 34	INTEG0-9 - INTEG60+	-.2917	.4593	6.630E-02	-.4250	-.1583	-4.399	47	.000
Pair 35	INTEG10-19 - INTEG60+	-.2917	.4593	6.630E-02	-.4250	-.1583	-4.399	47	.000
Pair 36	INTE20-29 - INTEG60+	-.2917	.4593	6.630E-02	-.4250	-.1583	-4.399	47	.000
Pair 37	INTEG30-39 - INTEG60+	-.2708	.4942	7.133E-02	-.4143	-.1273	-3.797	47	.000
Pair 38	INTEG40-49 - INTEG60+	-.2917	.4593	6.630E-02	-.4250	-.1583	-4.399	47	.000
Pair 39	INTEG50-59 - INTEG60+	-.2292	.5921	8.547E-02	-.4011	-5.72E-02	-2.681	47	.010

'Erikson 1' Ratings

T-Tests Importance Ratings: Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IMPCHILD	2.462687	67	1.259249	.153842
	IMP.INTI	4.179104	67	.903283	.110354
Pair 2	IMP.ID	3.030303	66	1.358389	.167206
	IMP.INTI	4.196970	66	.898198	.110561
Pair 3	IMP.INTI	4.118644	59	.911322	.118644
	IMP.GEN	3.406780	59	1.100449	.143266
Pair 4	IMP.INTI	4.470588	17	.624264	.151406
	IMP.INTE	3.529412	17	1.230734	.298497

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	IMPCHILD & IMP.INTI	67	-.074	.552
Pair 2	IMP.ID & IMP.INTI	66	.071	.573
Pair 3	IMP.INTI & IMP.GEN	59	-.152	.250
Pair 4	IMP.INTI & IMP.INTE	17	-.182	.485

'Erikson 1' Ratings

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	IMPCHILD - IMP.INTI	-1.716418	1.603084	.195848	-2.107441	-1.325395	-8.764	66	.000
Pair 2	IMP.ID - IMP.INTI	-1.166667	1.574639	.193825	-1.553761	-.779572	-6.019	65	.000
Pair 3	IMP.INTI - IMP.GEN	.711864	1.531855	.199431	.312661	1.111068	3.569	58	.001
Pair 4	IMP.INTI - IMP.INTE	.941176	1.477777	.358413	.181374	1.700979	2.626	16	.018

'Erikson 1' Ratings

T-Tests Vividness Ratings:Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VIV.CHIL	3.376812	69	1.099484	.132362
	VIV.INTI	3.898551	69	.893521	.107567
Pair 2	VIV.ID	3.294118	68	.978253	.118631
	VIV.INTI	3.926471	68	.886317	.107482
Pair 3	VIV.INTI	3.819672	61	.885216	.113340
	VIV.GEN	3.622951	61	.819836	.104969
Pair 4	VIV.INTI	3.705882	17	.771744	.187175
	VIV.INTE	3.705882	17	.771744	.187175

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VIV.CHIL & VIV.INTI	69	-.185	.128
Pair 2	VIV.ID & VIV.INTI	68	.043	.731
Pair 3	VIV.INTI & VIV.GEN	61	-.348	.006
Pair 4	VIV.INTI & VIV.INTE	17	-.364	.151

'Erikson 1' Ratings

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	VIV.CHIL - VIV.INTI	-.521739	1.539755	.185365	-.891629	-.151850	-2.815	68	.006
Pair 2	VIV.ID - VIV.INTI	-.632353	1.291816	.156656	-.945039	-.319667	-4.037	67	.000
Pair 3	VIV.INTI - VIV.GEN	.196721	1.400234	.179282	-.161895	.555338	1.097	60	.277
Pair 4	VIV.INTI - VIV.INTE	.000000	1.274755	.309173	-.655418	.655418	.000	16	1.000

'Erikson 1' Ratings

T-Tests **Intensity Ratings: Comparisons for Intimacy with all other Stages**

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	INT.CHIL	3.159420	69	1.037860	.124944
	INT.INTI	4.043478	69	.898279	.108140
Pair 2	INT.ID	3.147059	68	1.109857	.134590
	INT.INTI	4.029412	68	.913752	.110809
Pair 3	INT.INTI	3.983871	62	.914222	.116106
	INT.GEN	3.516129	62	1.141497	.144970
Pair 4	INT.INTI	3.764706	17	.903425	.219113
	INT.INTE	3.470588	17	.874475	.212091

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	INT.CHIL & INT.INTI	69	-.134	.273
Pair 2	INT.ID & INT.INTI	68	.084	.496
Pair 3	INT.INTI & INT.GEN	62	.040	.760
Pair 4	INT.INTI & INT.INTE	17	-.326	.202

'Erikson 1' Ratings

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	INT.CHIL - INT.INTI	-.884058	1.460623	.175838	-1.234938	-.533178	-5.028	68	.000
Pair 2	INT.ID - INT.INTI	-.882353	1.377099	.166998	-1.215682	-.549024	-5.284	67	.000
Pair 3	INT.INTI - INT.GEN	.467742	1.433987	.182117	.103577	.831907	2.568	61	.013
Pair 4	INT.INTI - INT.INTE	.294118	1.447615	.351098	-.450177	1.038412	.838	16	.415

'Erikson 1' Ratings

T-Tests **Rehearsal Ratings:** **Comparisons for Intimacy with all other Stages**

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	REH.CHIL	2.768116	69	.909831	.109531
	REH.INTI	3.507246	69	.949043	.114251
Pair 2	REH.ID	2.955224	67	.928225	.113401
	REH.INTI	3.507463	67	.927250	.113282
Pair 3	REH.INTI	3.409836	61	.901426	.115416
	REH.GEN	3.327869	61	.831090	.106410
Pair 4	REH.INTI	3.235294	17	.752447	.182495
	REH.INTE	3.411765	17	.939336	.227823

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	REH.CHIL & REH.INTI	69	-.032	.794
Pair 2	REH.ID & REH.INTI	67	-.026	.834
Pair 3	REH.INTI & REH.GEN	61	.040	.759
Pair 4	REH.INTI & REH.INTE	17	.296	.248

'Erikson 1' Ratings

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	REH.CHIL - REH.INTI	-.739130	1.335623	.160790	-1.059982	-.418279	-4.597	68	.000
Pair 2	REH.ID - REH.INTI	-.552239	1.328973	.162360	-.876401	-.228077	-3.401	66	.001
Pair 3	REH.INTI - REH.GEN	8.197E-02	1.201320	.153813	-.225705	.389640	.533	60	.596
Pair 4	REH.INTI - REH.INTE	-.176471	1.014599	.246076	-.698129	.345188	-.717	16	.484

'Erikson 2'

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
DECADE	Sphericity Assumed	25.182	6	4.197	7.697	.000
	Greenhouse-Geisser	25.182	4.171	6.038	7.697	.000
	Huynh-Feldt	25.182	4.607	5.466	7.697	.000
	Lower-bound	25.182	1.000	25.182	7.697	.008
Error(DECADE)	Sphericity Assumed	160.304	294	.545		
	Greenhouse-Geisser	160.304	204.361	.784		
	Huynh-Feldt	160.304	225.746	.710		
	Lower-bound	160.304	49.000	3.272		
STAGE	Sphericity Assumed	1.114	4	.279	4.938	.001
	Greenhouse-Geisser	1.114	3.320	.336	4.938	.002
	Huynh-Feldt	1.114	3.590	.310	4.938	.001
	Lower-bound	1.114	1.000	1.114	4.938	.031
Error(STAGE)	Sphericity Assumed	11.057	196	5.641E-02		
	Greenhouse-Geisser	11.057	162.673	6.797E-02		
	Huynh-Feldt	11.057	175.912	6.286E-02		
	Lower-bound	11.057	49.000	.226		
DECADE * STAGE	Sphericity Assumed	55.510	24	2.313	6.997	.000
	Greenhouse-Geisser	55.510	11.400	4.869	6.997	.000
	Huynh-Feldt	55.510	15.106	3.675	6.997	.000
	Lower-bound	55.510	1.000	55.510	6.997	.011
Error(DECADE*STAGE)	Sphericity Assumed	388.719	1176	.331		
	Greenhouse-Geisser	388.719	558.584	.696		
	Huynh-Feldt	388.719	740.185	.525		
	Lower-bound	388.719	49.000	7.933		

'Erikson 2'

Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
DECADE	Pillai's Trace	.549	8.918[a]	6.000	44.000	.000
	Wilks' Lambda	.451	8.918[a]	6.000	44.000	.000
	Hotelling's Trace	1.216	8.918[a]	6.000	44.000	.000
	Roy's Largest Root	1.216	8.918[a]	6.000	44.000	.000
STAGE	Pillai's Trace	.296	4.827[a]	4.000	46.000	.002
	Wilks' Lambda	.704	4.827[a]	4.000	46.000	.002
	Hotelling's Trace	.420	4.827[a]	4.000	46.000	.002
	Roy's Largest Root	.420	4.827[a]	4.000	46.000	.002
DECADE * STAGE	Pillai's Trace	.906	10.470[a]	24.000	26.000	.000
	Wilks' Lambda	.094	10.470[a]	24.000	26.000	.000
	Hotelling's Trace	9.665	10.470[a]	24.000	26.000	.000
	Roy's Largest Root	9.665	10.470[a]	24.000	26.000	.000

a. Exact statistic

b.
Design: Intercept
Within Subjects Design: DECADE+STAGE+DECADE*STAGE

'Erikson 2' Simple Main Effects for Repeated Measures

A = Cue Type (Stage) (5 levels)
B = Decade (7 levels)

Summary Table

	Cue Type					
Decade	A1	A2	A3	A4	A5	Totals
B1	50	12	5	1	8	76
B2	35	33	15	8	20	111
B3	16	16	30	21	22	105
B4	8	10	9	20	11	58
B5	2	9	10	21	8	50
B6	7	11	12	19	14	63
B7	16	26	27	35	33	137
Totals	134	117	108	125	116	600

Effect of Cue Type on memories recalled from 1st decade, (0 to 9 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[1] = .33

SSa at b1

$$\frac{(50)_2 + (12)_2 + (5)_2 + (1)_2 + (8)_2}{50} - \frac{(50 + 12 + 5 + 1 + 8)_2}{250}$$

$$= \frac{2734}{50} - \frac{5776}{250} = 54.7 - 23.1 = 31.58$$

Observed F

$$\frac{31.58}{.33} = 95.7, \text{df}(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 1st decade

[1] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 2nd decade, (10 to 19 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[2] = .33

SSa at b2

$$\frac{(35)_2 + (33)_2 + (15)_2 + (8)_2 + (20)_2}{50} - \frac{(35 + 33 + 15 + 8 + 20)_2}{250}$$

$$= \frac{3003}{50} - \frac{12321}{250} = 60.1 - 49.3 = 10.80$$

Observed F

$$\frac{10.80}{.33} = 32.70, \text{ df}(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 2nd decade

[2] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 3rd decade, (20 to 29 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[3] = .33

SSa at b3

$$\frac{(16)_2 + (16)_2 + (30)_2 + (21)_2 + (22)_2}{50} - \frac{(16 + 16 + 30 + 21 + 22)_2}{250}$$

$$= \frac{2337}{50} - \frac{11025}{250} = 46.74 - 44.10 = 2.64$$

Observed F

$$\frac{2.64}{.33} = 8.00,\ df(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 3rd decade

[3] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 4th decade, (30 to 39 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[4] = .33

SSa at b4

$$\frac{(8)_2 + (10)_2 + (9)_2 + (20)_2 + (11)_2}{50} - \frac{(8 + 10 + 9 + 20 + 11)_2}{250}$$

$$= \frac{766}{50} - \frac{3364}{250} = 15.32 - 13.46 = 1.86$$

Observed F

$$\frac{1.86}{.33} = 5.64,\ df(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 4th decade

[4] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 5th decade, (40 to 49 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[5] = .33

SSa at b5

$$\frac{(2)_2 + (9)_2 + (10)_2 + (21)_2 + (8)_2}{50} - \frac{(2 + 9 + 10 + 21 + 8)_2}{250}$$

$$= \frac{690}{50} - \frac{2500}{250} \qquad 13.8 - 10.0 \qquad = \qquad 3.8$$

Observed F

$$\frac{3.8}{.33} \qquad = \qquad 11.52,\ df(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 5th decade.

[5] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 6th decade, (50 to 59 years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[6] = .33

SSa at b6

$$\frac{(7)_2 + (11)_2 + (12)_2 + (19)_2 + (14)_2}{50} - \frac{(7 + 11 + 12 + 19 + 14)_2}{250}$$

$$= \frac{871}{50} - \frac{3969}{250} = 17.42 - 15.88 = 1.54$$

Observed F

$$\frac{1.54}{.33} = 4.68,\ df(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from the 5th decade.

[6] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

Effect of Cue Type on memories recalled from 7th decade (60+ years)

a= 5; b= 7; s = 50; df(a-1)(b-1)(s-1) = 1176: MSerror[7] = .33

SSa at b7

$$\frac{(16)_2 + (26)_2 + (27)_2 + (35)_2 + (33)_2}{50} - \frac{(16 + 26 + 27 + 35 + 33)_2}{250}$$

$$= \frac{3975}{50} - \frac{18769}{250} = 79.5 - 75.08 = 4.42$$

Observed F

$$\frac{4.42}{.33} = 13.39,\ df(4,1176)$$

Critical F @ (4,>1000) = 4.62 at 0.001 level

p.<0.001, cue type had an effect on recall of memories from 60+ years.

[7] MSerror = Mean Square, Error (decade x stage) from Repeated Measures Anova

'Erikson 2'

T-Tests Importance Ratings: Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IMP.CH	3.37	106	1.17	.11
	IMP.INTI	3.92	106	1.22	.12
Pair 2	IMP.ID	3.21	108	1.19	.11
	IMP.INTI	3.94	108	1.21	.12
Pair 3	IMP.INTI	3.90	104	1.22	.12
	IMP.GEN	3.55	104	1.30	.13
Pair 4	IMP.INTI	3.93	107	1.21	.12
	IMP.INTE	3.40	107	1.27	.12

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	IMP.CH & IMP.INTI	106	.053	.587
Pair 2	IMP.ID & IMP.INTI	108	.029	.765
Pair 3	IMP.INTI & IMP.GEN	104	.132	.183
Pair 4	IMP.INTI & IMP.INTE	107	.001	.989

'Erikson 2'

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	IMP.CH - IMP.INTI	-.56	1.64	.16	-.87	-.24	-3.496	105	.001
Pair 2	IMP.ID - IMP.INTI	-.72	1.67	.16	-1.04	-.40	-4.485	107	.000
Pair 3	IMP.INTI - IMP.GEN	.36	1.66	.16	3.29E-02	.68	2.186	103	.031
Pair 4	IMP.INTI - IMP.INTE	.52	1.75	.17	.19	.86	3.093	106	.003

'Erikson 2'

T-Tests Vividness Ratings:Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VIV.CH	3.51	109	1.04	9.98E-02
	VIV.INTI	4.16	109	.89	8.56E-02
Pair 2	VIV.ID	3.54	108	1.01	9.71E-02
	VIV.INTI	4.14	108	.88	8.47E-02
Pair 3	VIV.INTI	4.14	108	.91	8.77E-02
	VIV.GEN	3.79	108	1.18	.11
Pair 4	VIV.INTI	4.10	108	.90	8.62E-02
	VIV.INTE	3.48	108	1.15	.11

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VIV.CH & VIV.INTI	109	.172	.074
Pair 2	VIV.ID & VIV.INTI	108	.220	.022
Pair 3	VIV.INTI & VIV.GEN	108	.028	.776
Pair 4	VIV.INTI & VIV.INTE	108	.025	.801

'Erikson 2'

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	VIV.CH - VIV.INTI	-.64	1.25	.12	-.88	-.40	-5.359	108	.000
Pair 2	VIV.ID - VIV.INTI	-.60	1.18	.11	-.83	-.38	-5.285	107	.000
Pair 3	VIV.INTI - VIV.GEN	.35	1.47	.14	7.06E-02	.63	2.480	107	.015
Pair 4	VIV.INTI - VIV.INTE	.62	1.44	.14	.35	.89	4.482	107	.000

'Erikson 2'

T-Tests Intensity Ratings: Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	INT.CH	3.18	101	1.13	.11
	INT.INT	4.06	101	1.02	.10
Pair 2	INT.ID	3.16	103	1.09	.11
	INT.INT	4.00	103	1.07	.11
Pair 3	INT.INT	3.96	98	1.10	.11
	INT.GEN	3.45	98	1.20	.12
Pair 4	INT.INT	3.92	98	1.08	.11
	INT.INTE	3.32	98	1.22	.12

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	INT.CH & INT.INT	101	.060	.551
Pair 2	INT.ID & INT.INT	103	-.017	.866
Pair 3	INT.INT & INT.GEN	98	.006	.952
Pair 4	INT.INT & INT.INTE	98	-.136	.181

'Erikson 2'

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	INT.CH - INT.INT	-.88	1.48	.15	-1.17	-.59	-5.990	100	.000
Pair 2	INT.ID - INT.INT	-.84	1.54	.15	-1.15	-.54	-5.571	102	.000
Pair 3	INT.INT - INT.GEN	.51	1.63	.16	.18	.84	3.106	97	.002
Pair 4	INT.INT - INT.INTE	.60	1.74	.18	.25	.95	3.426	97	.001

'Erikson 2'

T-Tests Rehearsal Ratings: Comparisons for Intimacy with all other Stages

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	REH.CH	2.75	102	1.05	.10
	REH.INT	3.40	102	1.09	.11
Pair 2	REH.ID	2.64	100	1.04	.10
	REH.INT	3.33	100	1.10	.11
Pair 3	REH.INT	3.35	97	1.12	.11
	REH.GEN	2.92	97	1.12	.11
Pair 4	REH.INT	3.25	100	1.12	.11
	REH.INTE	2.75	100	1.07	.11

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	REH.CH & REH.INT	102	-.103	.301
Pair 2	REH.ID & REH.INT	100	.193	.054
Pair 3	REH.INT & REH.GEN	97	.056	.583
Pair 4	REH.INT & REH.INTE	100	-.023	.819

'Erikson 2'

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	REH.CH - REH.INT	-.65	1.59	.16	-.96	-.33	-4.110	101	.000
Pair 2	REH.ID - REH.INT	-.69	1.36	.14	-.96	-.42	-5.070	99	.000
Pair 3	REH.INT - REH.GEN	.43	1.54	.16	.12	.74	2.768	96	.007
Pair 4	REH.INT - REH.INTE	.50	1.57	.16	.19	.81	3.191	99	.002